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CAWKER'S AMERICAN FLOUR MILL DIRECTORY FOR 1886

IS THIS DAY, FEBRUARY 3, 1886, READY FOR DELIVERY. PRICE, \$10.00.

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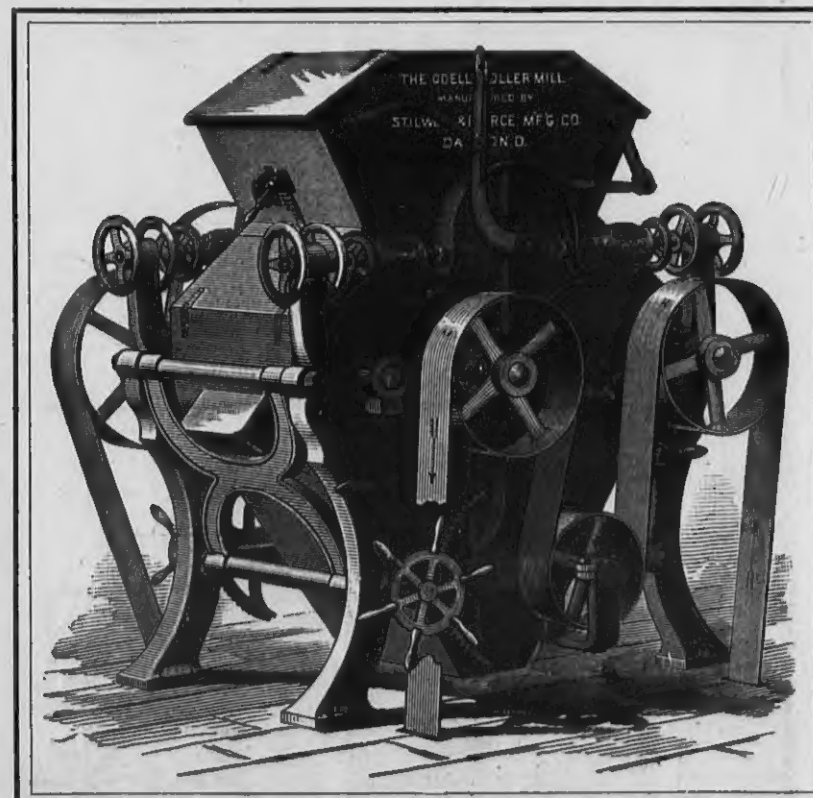
MILL • FURNISHER, • FLOUR • BROKER, • TRANSPORTATION • COMPANY, • INSURANCE • COMPANY
FLOUR IMPORTER, MERCHANT MILLER,

Or anyone desiring to reach those connected with the FLOURING INDUSTRY, should order this Book at once.

THIS Directory contains the names and addresses of 18,289 Flour Mill owners in the United States and Dominion of Canada. It further specifies in many thousands of cases whether stones or rolls or both are used in the manufacture of flour; whether rye, buckwheat, cornmeal or oatmeal are specialties; whether steam or water power is used. Names of Millowners estimated to have over \$10,000 invested in the business are marked by a special sign. It also contains a reliable list of MILLWRIGHTS in the U. S. and Canada, and a long list of the PRINCIPAL FLOUR BROKERS in the U. S. and Canada, and a list of EUROPEAN FLOUR IMPORTERS. These last named lists are of immense value to MILLERS. Address all communications and make all paper payable to the order of

E. HARRISON CAWKER, No. 124 Grand Avenue, MILWAUKEE, WIS.

ODELL'S ROLLER MILL SYSTEM



Is now in successful operation in a large number of mills, both large and small, on hard and soft wheat, and is meeting with unparalleled success. All the mills now running on this system are doing very fine and close work, and we are in receipt of the most flattering letters from millers. References and letters of introduction to parties using the Odell Rolls and System, will be furnished on application to all who desire to investigate.

❖ Odell's Roller Mill ❖

Invented and Patented by U. H. ODELL, the builder of several of the largest and best Gradual Reduction Flour Mills in the country.

AN ESTABLISHED SUCCESS!

We invite particular attention to the following

POINTS OF SUPERIORITY

possessed by the Odell Roller Mill over all competitors, all of which are broadly covered by patents, and cannot be used on any other machine.

1. It is driven entirely with belts, which are so arranged as to be equivalent to giving each of the four rolls a separate driving-belt from the power shaft, thus obtaining a positive differential motion which cannot be had with short belts.

2. It is the only Roller Mill in market which can instantly be stopped without throwing off the driving-belt, or that has adequate tightener devices for taking up the stretch of the driving-belts.

3. It is the only Roller Mill in which one movement of a hand lever spreads the rolls apart and shuts off the feed at the same time. The reverse movement of this lever brings the rolls back again exactly into working position and at the same time turns on the feed.

4. It is the only Roller Mill in which the movable roll-bearings may be adjusted to and from the stationary roll-bearings without disturbing the tension-spring.

5. Our Corrugation is a decided advance over all others. It produces a more even granulation, more middlings of uniform shape and size, and cleans the bran better.

WE USE NONE BUT THE BEST ANSONIA ROLLS.

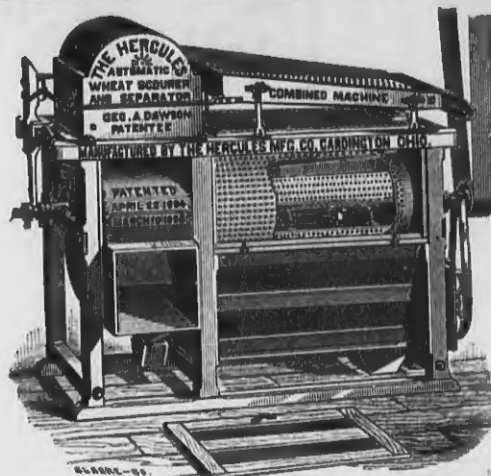
Our Corrugation differs from all others, and produces less Break Flour and Middlings of Better Quality.

Mill owners adopting our Roller Mills will have the benefit of Mr. Odell's advice, and long experience in arranging mills. Can furnish machines on short notice. For further information, apply in person or by letter to the sole manufacturers,

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THE Hercules Automatic Wheat Scourer AND Separator

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THE HERCULES MFG. CO., Cardington, Ohio.

IT HAS INCREASED OUR TRADE.

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Gentlemen:—We like the "Hercules" machine very much indeed. It has increased our trade, and we will buy another for our other mill in the Spring. It certainly is the best Scourer we know of.

Yours Respectfully,

SCHREURS BROS.

SCHREURS BROS.,
PROPRIETORS OF YOUNG AMERICA ROLLER MILLS,
Muscatine, Iowa, December 9th, 1885.

[Mention this Paper when you write.]

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Reduces Condensation of Steam.
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Prevents Sweating and Freezing.
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of this Road embraces all the modern improvements
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Be sure your tickets read via the

Green Bay, Winona & St. Paul Railroad.

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General Pass. Agent.

General Manager.

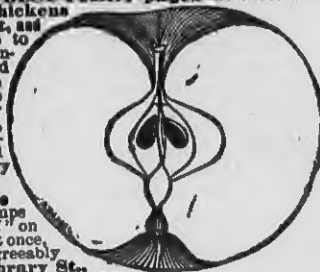
GREEN BAY, WIS.

TRIAL OFFER

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is a handsomely-printed monthly paper, with
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Handful of Earth. Wait 'till the
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When the Sun Goes Down. A Knot
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With a Cool. Sweet Violets.
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Nellie. Bold McIntires. Only a
Pansy Blossom. Nobody Knows
What a Racket Was There. Where
Is My Wandering Boy To-night?
Paddy Duffy's Cart. Widow No-
lan's Goat. Warrior Bold. We Sat
by the River. You and I. You Will
Miss Me When I'm Gone. Old, and
Only in the Way. Oh, Dem Golden
Blippers. Only to See Her Face Again. I've Only Been Down to the Club. Nelly Gray. You
Get More Like Your Dad Every Day. My Pretty Red Rose. I'll Remember You Love, in My
Prayers. Rosy's Sunday Out. When You've Got But Fifty Cents. Old Folks at Home. I'll
Take You Home Again, Kathleen. Old-Fashioned Homestead. Pallet of Straw. Cradle's
Empty. Baby's Gone. Never Take the Horseshoe from the Door. Blue Aisatian Mountains.
Leaf of Ivy from my Angel Mother's Grave. Mary of the Wild Moor. Peek-a-Boo. Joe Hardy.
Home Again. We Never Speak as we Pass By. Farmer's Boy. Lullaby. Boys, Keep Away
from the Girls. Baby Mine. Grandmother's Old Arm Chair. High Water Pants. Over the
Garden Wall. A Flower from my Angel Mother's Grave. I Left Ireland and Mother Because
we Were Poor. Give an Honest Irish Lad a Chance. Not Before Pa. Spanish Cavalier.
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Poor, But a Gentleman Still. Sweet Evelina. Forgive and Forget. All the Troubles You Have
Met. This book is printed on paper same size as sheet music. Order a copy now. Address
AMERICAN PUBLISHING CO., 17 North Tenth St., Philadelphia, Penn'a.

Did you hear us?

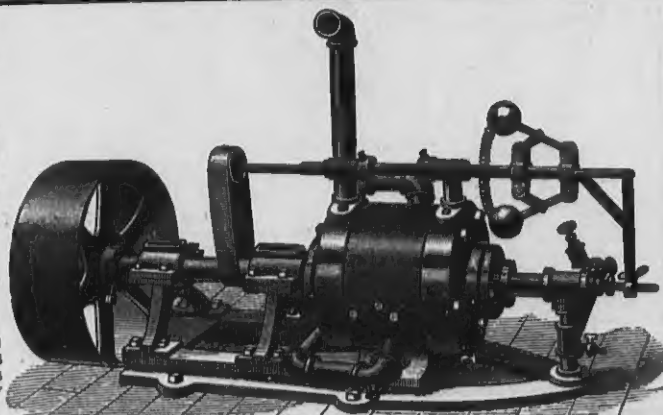
We told you over a year ago
that our Engine was "on the
market to stay." We now tell
you it is the best Engine in the
world, and is gaining favor
every day and everywhere.

Highest Economy,
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THE BEST in all respects
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Yes, it's a rotary, and we can
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SAFES OF ALL SIZES.

No. 4, weight 1,100 lbs., \$60.

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Leave.	Arrive.
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Fare to Chicago Only \$2.

Round Trips, \$3.50, meals and berths included.
Sure connections at Chicago with all . M. trains for
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Quinnesec, Norway, and all Lake Superior points.

G. HURSON, Secretary and Agent.

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Rapid * Grain * Dryer!

FOR RAPIDITY, SATISFACTORY RESULTS AND THOROUGHNESS

UNEQUALED!

Get the Best; the Best is Cheapest. No Parch, Shivel, Discoloration or other evidence
of Artificial Drying.

The grain is dried at the rate of about 1,000 bushels per hour, the automatic arrangements and low temperature used insuring evenness and uniformity. The capacity, however, can be increased in proportion to power and space afforded, these latter being the only limit. In addition to drying evenly, the operations of the very dry air, peculiar to this machine, remove from the grain any slight odor from sweat or heat, and put it in condition to grade. The air used is a prepared air, and has all the varied degrees of low temperature necessary. Damp grain made as rules of inspection require, or as dry even, as old grain. Thus the BATES' DRYER is the most perfect as well as rapid dryer extant. It is beyond question The Champion Grain Dryer. Absolutely safe against fire.

New Corn can be made to grade immediately by the BATES' CHAMPION RAPID GRAIN DRYER. Corn of present crop, all over the country, is too damp to grade, and likely to be thus for months to come and can only be made to grade by artificial means. The BATES' DRYER is the only dryer that can dry the Grain in large quantities at trifling cost, naturally, and not show parch, shivel, or other evidence of artificial drying; the drying by this method being precisely that accomplished by a natural dry atmosphere, only that the machine accomplishes in a very brief space of time what would ordinarily require months. It is not necessary by this process to dry out any more moisture than will bring the grain up to the desired grade.

Dryers for grains of all kinds, including Brewers' Grains, cotton seed, flax, and grass seeds, glucose refuse. Also for Phosphates, Starch, Glue, Fruit, Lumber, Shingles, and Veneering, Hides, Leather, Hair, Moss, Wool, etc.

THE BATES' FERTILIZER DRYER accomplishes about three times the work accomplished by any of its competitors with about one-quarter of the steam. Besides grinding and drying the offal, this dryer delivers it cold and ready for immediate shipment.

The expense of drying by this method is reduced to smallest possible cost, which is below that of any other. Machines are compact. Experienced workmen will be sent to set them up and instruct as to operating. For further particulars address,

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BUCKETS
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BUT ARE
FIRST CLASS
ELEVATOR
BUCKETS
IN EVERY
RESPECT

SALEM
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THEY WERE
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FIRST
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[Please mention this paper when you write to us.]

To Preserve Iron and Keep Boilers and Flues from Scaling, use

* H. P. GRAVES' BOILER PURGER. *

It has been practically demonstrated that a scale one-sixteenth of an inch thick on a Boiler will require twenty per cent. more fuel than a clean Boiler, while a scale one-fourth of an inch thick will require sixty per cent. more fuel. The scale is a non-conductor of heat, and its formation in Boilers is general through the United States, more especially in the lime and alkali districts, and enough attention has not been paid to keeping Boilers free from accumulations. The cost of fuel for steam purposes is an important item, and any system for economy in this direction should receive due consideration. I am manufacturing a **BOILER PURGER** which I claim is the best made: *First*.—That it will remove the scale from any Boiler, and, by its continued use, will keep it from forming. *Second*.—That it will not injure the Boiler, Valves or Cylinder, nor foam the water, nor injure the water for drinking purposes. It is easy to use, being in a liquid form, it can be put directly into the Boiler, through the Safety Valve, Whistle Valve, or by Force Pump, or into the Tank. *Third*.—That by its use, from fifteen to forty per cent. can be saved in the cost of fuel, besides the expense of putting in new flues every one or two years. Address, for prices, etc., to

H. P. GRAVES,

CHICAGO, 255 South Canal St.

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MINNEAPOLIS, 327 Hennepin Ave.

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JONATHAN MILLS UNIVERSAL FLOUR DRESSER

GUARANTEED TO BE SUPERIOR TO ANY OTHER BOLTING DEVICE FOR
CLEAR, CLEAN

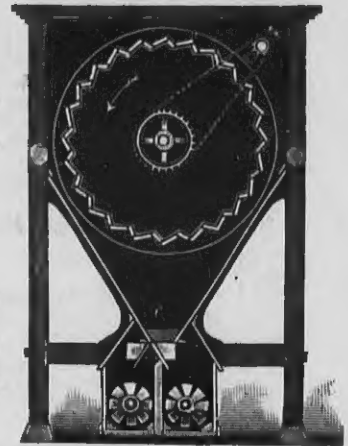
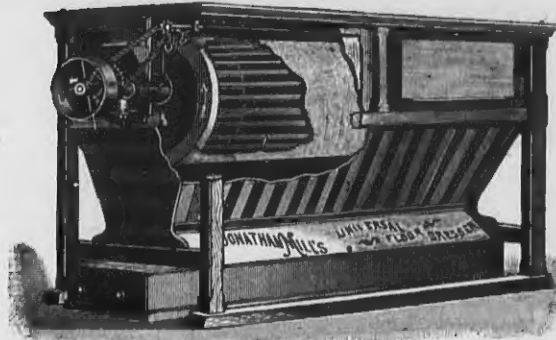
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OF ALL GRADES OF FLOUR.

They cannot be beat on any Stock, and are being extensively adopted for the entire olting in new mills.

Finely Designed and Mechanically Constructed.
Slow Speed
Occupies Small Space, and has Immense Capacity

For Price Lists, Sizes and Dimensions send to the



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THE OLD RELIABLE ROUTE.

17 Miles the Shortest Line

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Marinette, Wis., and Menominee, Mich.

—THE NEW ROUTE TO—

New London, Grand Rapids, and all points in
CENTRAL AND NORTHERN WISCONSIN.

The new line to Menominee is now completed, and opens to the public the shortest and best route to all points on the Michigan Peninsula.

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AT GREEN BAY with Chicago & North Western and Green Bay, Winona & St. Paul Railroads, for all points North and West.

C. F. DUTTON, General Supt.



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Jeweler & Diamond Setter,

Dealer in

WATCHES, CLOCKS, JEWELRY,

Silver and Plated Ware.

Special Attention Given to Repairing.

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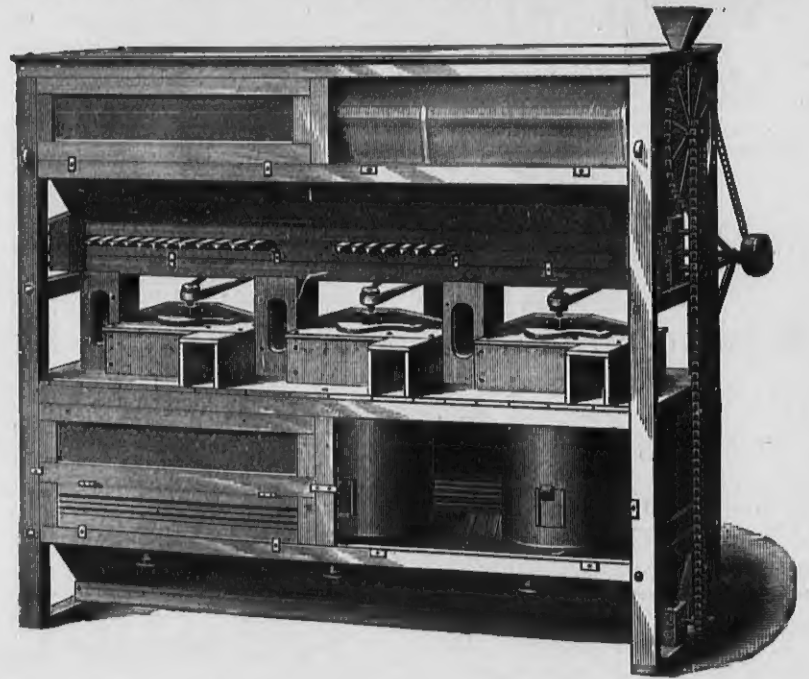
Cor. West Water St.,

MILWAUKEE, WIS.

The Wilcox Tailings Cleaner

THIS IS A NEW MACHINE WHICH MILLERS

MUST HAVE



Immense Reduction in Low Grade!

TESTIMONIALS.

Indispensable in any Mill!

Cream City Mills, Milwaukee, Wis., September 9, 1885.

The Cockle Separator Mfg. Co., Milwaukee, Wis.

GENTS: In regard to the Wilcox Tailings Cleaner that we are using on tailings, we take pleasure in acknowledging it as an improvement that millers must have, as the results are valuable upon several points. From its peculiar construction it adapts itself to handling tailings superior to anything we have ever seen. We hope it will have the success a good machine deserves.

Very truly yours,

A. W. CURTIS & CO., Proprietors.
ED. PHILLIPS, Head Miller.

The Cockle Separator Mfg. Co., Milwaukee, Wis.

GENTS: I take pleasure in informing you that I have been running a Wilcox Tailings Cleaner for a few months, and find it truly to be the "Miller's Friend." It makes more perfect separations than any other machine in the market, and gets all the Middlings out of the Tailings, reducing low grade to about two per cent. If I could not get another machine like it I would not sell it for \$1,000.

Yours truly,

W. H. COWDEN.

Write for circulars and prices.

COCKLE SEPARATOR MFG. CO., MILWAUKEE, WIS.

Manufacturers of Kurth's Patent Improved Cockle Separator, Richardson's Dustless Oat Separator, Beardslee's Patent Grain Cleaner, and Wilcox's Tailings Cleaner.



Published by E. HARRISON CAWKER. VOL. 20, No. 4. MILWAUKEE, FEBRUARY, 1886.

TERMS: \$1.00 a Year in Advance. Single Copies, 10 Cents.

JACKSON, MICHIGAN FESTIVITIES.

On New Year's evening, Mr. Geo. T. Smith, President of the Geo. T. Smith Middlings Purifier Co., gave a grand banquet at the Hibbard House in that city to the company's legal advisers, principal employees and traveling salesmen. Forty-five guests sat down to enjoy the good things set before them. Among those present from out of the city were: Col. Rodney Mason, of Detroit, Messrs. Howland Arnold, of Toronto, Ont., the two lawyers who carried the Geo. T. Smith Canadian patent suit through the various Canadian courts and finally to the English privy council, where the suit was decided in their favor; John Webster, the Geo. T. Smith representative in Toronto, Wade Wilson, eastern agent, John M. Roe, of St. Louis, southwestern agent, W. D. Gray, milling engineer and expert with E. P. Allis & Co., Milwaukee, Hon. J. G. Flanders, of Milwaukee, one of the attorneys of the Purifier Company in the suit against the Milwaukee Dust Collector Company; Mr. Duncan, superintendent of the Purifier branch works at Stratford, Ont.; Chas. H. Scott, agent in Maryland, Delaware and the Virginias; W. I. Keal, agent of the Michigan territory; H. J. Wright, of Rochester, N. Y., representative in New York.

Short addresses, highly entertaining, were made by Col. Mason, of Detroit, Mr. Howland, of Toronto, and by several others present.

Mr. John E. Winn, who has charge of the legal and advertising business of the company, was called upon and addressed the gentlemen present substantially, as follows:

"The gentlemen he saw before him were a company trained to be constantly on the alert for something new and original, which was a sufficient reason why he should not attempt to occupy their attention with a speech. He felt, however, that he could not do less than acknowledge the courtesy their invitation expressed. This was the fourth annual banquet at which, with thoughtful consideration and characteristic liberality the Smith Purifier Company greeted its principal employees and welcomed home its traveling salesmen. Most of the gentlemen who had met there a year ago, were again ranged around the festal board of their genial host. Some present, were veterans and their memory extended back to the time—less than a dozen years ago—when the annual business of the Smith Purifier Company was less than \$75,000; the books of the company to-day show that during the year just closed, it has shipped from here nearly \$2,000,000 worth of

machines, distributed to every section of the globe where wheat is milled. Its large Canadian business would swell this many hundreds of thousands more. While the company appreciates the part which the gentlemen have taken, and the valuable aid rendered in building up its material interests at home, at the same time it is by no means insensible to the influence of their gentlemanly bearing and honorable conduct upon its reputation and character abroad. Their work was not limited to the taking of orders. They were the company's representatives. The company looks to them for information as to the practical developments of milling and expects them to suggest whatever improvements their observation and experience among the millers of the country lead them to think desirable. Reliable statistics prove that over 82 per cent. of all middlings purifiers in use in this country are the Geo. T. Smith machines. The company is not content with the degree of acknowledged excellence already attained for its machines, but is constantly seeking to make further improvements. In presenting the card of the Geo. T. Smith Middlings Purifier Company, its agents have no apologies to make. It never had an obligation to go to protest. It never broke faith with a customer. The courts have universally decided that it had its quarrels just. It has made friends of its former foes. It has overcome that prejudice which always exists against anything revolutionary, and the opinion of the highest court in Christendom has demonstrated that it is one of the greatest inventions of the world. No machine ever effected a more complete revolution in a great industry than the Middlings Purifier. The Purifier brought about the development of the spring wheat producing prairies of the great Northwest, which for centuries had lain neglected by the world, known vaguely and to song as "the Land of the Dakotas." Now visit the busy mills, the smiling farms, the happy homes in the "Land of Laughing Waters," and be convinced that its later history could not be written with the name of Geo. T. Smith and his Middlings Purifier omitted. That machine was not only the direct cause of the settlement of the great "New Northwest," but its invention marks an epoch in the history of milling. The world is familiar with the war its inventor fought to protect and defend his title and with his triumphant victories. But Smith was not content. He and his company saw the possibilities of the centrifugal reel, and have spared neither work nor expense until they have brought it to a degree of per-

fection never hoped for even by themselves. The results they have obtained from the centrifugal are producing almost as much commotion among the millers of the world to-day as those of the Purifier did a dozen years ago. The Eldred mill demonstrated the success of their efforts with the centrifugal, and to-day there is a hasty scramble among the progressive millers of the country each to get the new system of bolting before his neighbor does. During the past year no less than twenty-six mills, ranging in capacity from 100 to 500 barrels each per day, have adopted the full centrifugal system of bolting, using the Geo. T. Smith machines. Plans are being made for many more. No machine was ever brought to a higher degree of perfection than this, and yet, always "Improvement" is the watchword and "Progression" is the measure of every man's success in the service of this company. The company appreciates the services and character of the gentlemen present, and extends to them a royal welcome to the hospitalities of its home, wishing them life, health and abundant success as they enter upon the new year."

As the "wee sma' hours" came on, the pleasant social gathering gradually broke up, each participant feeling that one of the happiest events of a life-time had passed.

RECENT MILLING PATENTS.

The following list of Patents relating to milling interests, granted by the U. S. Patent Office during the past month, is specially reported by Stout & Underwood, Solicitors of Patents, 66 Wisconsin st., Milwaukee, Wis.:

Issue of December 29, 1885. No. 333,188—Grain drier, S. E. Worrell, Hannibal, Mo.; No. 333,351—Feeder for flouring mills, E. M. Smith and C. H. Heck, Tecumseh, Mich.; No. 333,420—Grain Scourer, J. McGill, Lockport, N. Y.; No. 333,463—Dust collector, N. W. Holt, Jackson, Mich.

Issue of January 5, 1886. No. 333,561—Barley machine, S. Spitzer, Vienna, Austria; No. 333,570—Feed regulator for roller mills, E. Strong, Kalamazoo, Mich.; No. 333,866—Roller mill, F. Lauhoff, Detroit, Mich.; No. 333,906—Grain drier, F. W. Wiesebeck, New York, N. Y.; No. 333,939—Grain drier, H. R. Foote, New York, N. Y.; No. 333,965—Rice huller and cuticle remover, J. S. Moore, New Orleans, La.; No. 333,980—Grinding mill or decorticator, J. Touya, Jr., Tarbes, France.

Issue of January 12, 1886. No. 334,246—Flour bolt, A. Y. Leake, Marietta, Ga.; No. 334,389—Roller mill, E. C. Keyser, Abilene, Kas.

Issue of January 19, 1886. No. 334,460—Roller mill, J. T. Obenchain, Logansport, Ind.; No. 334,643—Cockle separator, B. Cloutier, Minneapolis, Minn.

Issue of January 26, 1886. No. 334,891—Feed regulator for roller mills, J. R. Palmer, Dayton, Ohio; No. 334,897—Grain drier, C. F. Shedd, Fairfield, Neb.

RELIGIOUS ASPECTS OF PROTECTIVE TARIFF.

REPLY TO J. C. BATES, OF CHICAGO.

NORTHWESTERN TARIFF BUREAU, }
MILWAUKEE, JANUARY 10, 1886. }

Editor of the United States Miller:—

Mr. J. C. Bates, of Chicago, fiercely assails the extract from my lecture at Rockford, Illinois, you published in December. Its title, "Religious Aspects of Protective Tariff," made him very angry, with his denunciations of Protectionists as "masquerading monopolists," "pretending to be public benefactors," "style like Mormons," "extortioners," "robbers," &c.:

I shall be gentlemanly in my reply.

"Indecent words admit of no defense;
A want of decency's a want of sense."

The Hon. William D. Kelley, whom Mr. Bates coarsely assails, needs no apologist. No one in this great country more perfectly evidences the truth of the poet's couplet:

"Honor and shame from no condition rise,
Act well your part, there all the honor lies."

This venerable gentleman, now in his seventy-second year, born of poor parents, was early left an orphan. He filled the position of prosecuting attorney of the city and county of Philadelphia, and honored the bench as a judge of the Court of Common Pleas. Elected thirteen times, I believe in succession, to Congress, he has spent more than a third of his life as a Representative of Philadelphia, the birth-place of American Liberty, and of himself. He is the acknowledged "Father of the House." His long and faithful services to his constituency, second to none in the world, has established a character for ability and integrity, unsullied by a single stain, and won for him a fame, well known and appreciated by his countrymen, mostly by the toiling masses, as a true friend and fearless advocate of their rights. Revered at home and respected in foreign lands. Such a man cannot be injured by the venomous fangs of any assailant.

When the time comes—and may God in His goodness long avert it—for encomiums to be said upon William D. Kelley, some honest free-trader, possessing a loftier spirit, moved by higher and nobler motives than the one referred to, casting out all remembrance of opposition, may truthfully repeat what Breckenridge said of Henry Clay:

"If I were to write his epitaph, I would inscribe as the highest eulogy on the stone which shall mark his resting place: 'Here lies a man who was in the public service—years, and never attempted to deceive his countrymen.'"

Mr. Bates says:

"Not a few people have become impressed with the idea that the tariff is something akin to the Constitution—not to be meddled with or changed in any way."

Does he not know that the framers of the Constitution provided for changing that instrument; that it has been "meddled with" and "changed" some fifteen times. He should count the amendments; about the same number of changes have occurred in our tariff laws. The chief cause for framing the Constitution was the necessity of passing a law "for the encouragement and protection of manufactures." With the single exception of defining the oath of members of Congress, the first law ever passed, binding alike on all the States was the tariff act of July 4, 1789,—the great principle (of protective tariff) was then established by the fathers of the Constitution, with the father of his country at their head."

I spoke to intelligent American citizens at Rockford, Illinois, not to persons ignorant of the Constitution and history of their country. The courteous and extremely kind treatment accorded to me by several of the leading citizens of Rockford, is among my most pleasant recollections. Nor could I discover the semblance of any dislike or aversion to a lecture by one "not to the manner born," which seems, to Mr. Bates, to be an insuperable objection, except when that foreigner is more desirous of promoting the welfare of a foreign country than for furthering the prosperity of the United States.

Mr. Bates says:

"People who look into tariff questions are fully cognizant of the fact that where the duty is so high that it prohibits importation, the government does not receive any revenue from the articles so taxed."

Will he be kind enough to name some article on which the "duty is so high that it prohibits importation," and on which "the government does not receive any revenue." All will admit, that if nothing is imported, there will be no import tax collected.

The staple argument of free-traders, for many years past and until quite recently were, that the tariff was so high that the revenue was largely in excess of the government needs, and, therefrom was great danger to our institutions; and, that, the only way to avert that danger, was by lowering the tariff, to lessen the revenue. British free-traders worked in harmony with their Anglo-American free-trade brethren—130 in number—the Cobden Club having secured more allies in the United States, than in all other countries outside of England, all worked hard to secure a reduction of our tariff. The American members of the club claiming that it was for the interest of Americans. The Englishmen were more honest, openly avowing that their efforts were for the welfare and benefit of England. As an English manufacturer said to Robert P. Porter: "If you would give us half a chance we will beat you out of your home market. * * * You are the richest country on earth, and why can't you give us a chance to share your wealth?"

Mr. Bates asks:

"What advantage to the farmer, stock raiser or mechanic? Perhaps it makes his coat cost a dollar or two per ton more, causes him to pay two or three cents per pound higher for his sugar, a good round price for clothing and implements, in fact more for everything he consumes in his family."

It would be difficult to crowd more errors into the same space than are in the above extract. Coal of a like quality, though there is no anthracite coal there, is as cheap here as in England, as any person can ascertain from examination. As to sugar, every one ought to know that it is cheaper in this country than in any other part of the world, and that we exported immense quantities to England. Low as it is, the English laborer rarely gets any to sweeten his cup of tea, on which, when he does obtain one, the poorest laborer in England pays as much tariff on his cup of tea as does the Marquis of Westminster on his. The same is true of coffee, both bearing a high tariff in England, while both are admitted free of duty into the United States, a great benefit to the poorer classes. Clothing, such as is generally worn by "the farmer, stock raiser and mechanic," is cheaper here, better made, better cut, and more style to it, than in any other country. There is no army in the

world so well clothed, or so cheaply clothed, as is the American army, and with American-made cloth.

(I quote briefly from Hon. Thomas H. Dudley, late U. S. consul at Liverpool, England.)

All cotton goods are cheaper here than in England; all wooden ware furniture, all tools, axes, hammers, &c., are cheaper here than in England. In one year we exported to England about \$150,000 of edge tools, where they sell in preference to those of English make. Crockery, such as is generally used by "the farmer, stock raiser and mechanic," is far cheaper in the United States than in England; plates in New Jersey 80 cents a dozen, same quality in England 91 cents a dozen. All kitchen furniture, pots, pans and kettles are cheaper here than there. Pressed glass is far cheaper, and far better, here than in England. We export largely of certain articles of our manufactures to England because they are preferred. In one year \$740,833 of mowers, reapers, plows and agricultural implements; \$221,510 of carriages and carts; \$610,551 worth of clocks; \$100,505 worth of watches; \$156,123 wearing apparel; \$964,279 furniture and wooden ware; \$41,145 of glass and glass-ware; \$26,020 stoves; \$867,902 of machinery; \$519,458 manufactured iron, &c.; \$480,302 musical instruments; \$777,067 sewing machines; and \$65,182 lamps, &c., &c.; or a total of \$5,581,897 of the few articles above enumerated. In 1881 we exported to England 150,000,000 yards of cotton goods. The value of our exports of domestic merchandise, during 1885 is figured at \$726,682,946. With such, factshow foolish appears the following statement of Mr. Bates:

"The question to be decided by the people of these United States in the interest of labor, trade and commerce is: 'Shall we manufacture exclusively and solely for the home market, or letting down the bars which exclude us from foreign trade, shall we manufacture for the world?'"

The very fact that England let down her bars, let us into her market, and we are manufacturing for the world, and that is why the shoe pinches so in England, and why she is contemplating putting up the bars. That's what's the matter; as an English lord said:

"The real trouble is that the United States keeps an opposition shop in the same line as ourselves."

Mr. Bates says farming implements are higher through the tariff, &c. Mr. Dudley, present at an Agricultural Fair, where fifteen acres were covered with implements, says:

"The cheapest mower that was on the ground was 510 francs, which in our money is about \$102. You can buy just as good a mower here or in any town in the United States for \$65. The lowest reaper that was there (without a binder) was 925 francs, or in our money about \$185. You can buy as good a one in the United States for \$110. The lowest priced horse rake that was there was 250 francs, or \$50 of our money. You can buy as good here for \$27. The plows, harrows, cultivators, were twenty per cent. dearer than they are in the United States. There was not a fork, hoe, shovel or spade there, in the whole exhibition, but what was dearer in price and, most of them, inferior in quality to those which we make in this country. And so with carriages, wagons, carts, barrows, &c."

Bedsteads, bureaus, tables, wash-stands, sofas, chairs, wash-tubs, pails, trays, churns, &c., &c., all are cheaper here than in England.

There is a child-like simplicity about Mr. Bates' question:

"If the people are to be taxed, why not let the government have the benefit of such taxation, particularly as there is no revenue from

heavily "protected" articles as already explained?"

American free traders for years have had but one cry: "Surplus revenue from high tariff." John Bright said recently: "The danger of the excessive revenue the Americans were receiving from their high tariff would ensure their lowering it;" and, alluding to our paying our debt so rapidly, principally through our tariff revenue, he pronounced it "the most marvelous feat of financiering the world ever witnessed."

Prince Bismark bore testimony to the wisdom of our tariff, recommended it to the Reichstag. Prussia adopted a tariff and is now exporting largely to England, and is underselling the Englishman at his own doors, while the wages of German labor has been increased over 20 per cent. since the tariff was adopted.

The noted Count Andrássy of Austria-Hungary said in the Reichstag:

"America was the first State to lay down as a principle that the cost of the war of Independence should be paid by Europe, and she realizes this principle by raising the duties on a gigantic scale. The consequence was that America, by increasing her duties, not only developed her industries, but in fact had the expenses of that enormous war paid by Europe."

The annual value of our manufactures exceeds those of Great Britain by more than a thousand millions of dollars. Our exports largely exceed our imports. Our home market for our 60,000,000 of people is the best in the world. We are the best able to consume, because we earn the most through our higher wages.

Annually, from the earnings of our American laborers, &c., there are millions upon millions of dollars sent to Great Britain and Ireland, to save their foreign relations from want and suffering, and keep the aged and infirm from the poor houses and filling pauper graves.

The Register-General of England says that every seventh person that dies there dies a pauper. John Bright says "America is the home of the workingman." "Labor is honored more in America than anywhere else in the world." "Millions from other countries have entered it and found rest." "During fifteen years 2,500,000 people have left England for America, and every one of them is in better circumstances than they could have been had they remained in England."

Mr. Bright says "that there is in those who earn their living by their daily labor, particularly in the agricultural districts, an absence of hope of any independence as he advances in life. 'In the United States that hope prevails everywhere,'" and also:

"There has always existed among all the population (of America) an amount of comfort and abounding prosperity, such as I believe no other country in the world, in any age, has displayed."

Fawcett, the great English free trader says, hardly an agricultural laborer can be found in England, "who has been able to save one week's wages." Mr. Burt, M. P., says: "The laboring man in England is lucky if he escapes ending his days in the workhouse."

Had Mr. Bates read the newspapers, he would have known, that when he was writing his article, under "protective tariff" in America, those whom he calls "masquerading monopolists," owners or managers of large manufactories, more than a dozen of

them, were *unsolicited* advancing the pay rolls of their employes from 10 to 15 per cent., while under "free trade" in England, they had reduced their pay rolls 5 to 6 per cent., with the agreement that unless times got better by the 15th of January, 1886, a further reduction of wages of 5 per cent. was to be made. Thus, the "masquerading public benefactors," who style themselves "Protectionists" in America, *unsolicited* raise their pay rolls under the "robber tariff," while English free traders lower their pay rolls in England. "A protective tariff does," as the *Inter-Ocean* said, "stand at the elbow of every laboring man to help him to better wages, &c."

It is the prosperity of our home market and its needs that has caused the raising of wages here while they are lowered in England. The internal commerce of the United States is over \$10,000,000,000, very many millions in excess of the combined internal and foreign commerce of Great Britain, and nearly equal to the entire foreign commerce of all the European nations combined. Thus our home market is what creates our home trade. To deprive us of this market the Cobden Club spends its millions of dollars, deriving much aid and comfort from American free traders. Then why misrepresent the advantages of the American home market? What kind of patriotism is that which aids foreigners in their attempts to deprive us of such a market? The highest known English free trade authority, Adam Smith, says:

"Whatever tends to diminish in any country the number of artificers and manufacturers tends to diminish the home market, the most important of all markets, for the rude produce of the land, and thereby still further to discourage agriculture."

Mr. Bates says:

"Great Britain is so much of a free-trade country to-day that her laborers are better housed, better fed, and better clothed, than they ever were under protection, &c., &c."

Nothing is more calculated to deceive than the reiterated assertions of American free traders, who in many instances have been beguiled into the belief that England has free trade. A great many American free traders know no better—they are honestly ignorant, and are to be pitied. If England has free trade, what is her need of about 30 custom houses, about 3,000 customs officers, a numerous fleet of revenue cutters constantly cruising on her coasts?

Sir John E. Eardley Wilmot, M. P., says in his pamphlet, "Free or Fair Trade":

"Our coast everywhere bristles with custom houses, and we even find the solitary officer in his hut on the summit of Shakespeare's Cliff at Dover, carefully guarding against the introduction * * * from the opposite shores of France."

Will Mr. Bates explain why all these precautions are needed to protect a "free trade" country, or why it was that in 1881 England collected \$5,000,000 more tariff dues on American products into England than we collected in the same year on British products into the United States?

As to the condition of English labor, let him read the reports made to the royal commission inquiring into the causes of labor suffering; or the "Bitter Cry of Out-cast London" or "The Horrors of English Labor."

The *New York Times*, an American free trade journal, recently said:

"The suffering among the poor of London, which is always great, is now said to be unprecedented. * * * Any day during the

past fortnight one could see thousands of faint and ragged wretches prowling outside the wharves, each ready to fight the other in order to be one of a score who were admitted to a day's work for 40 cents, if a ship happened to come in. * * * This is a sample of all industries, while the farmer's prices have reached a starvation point."

I trust that Mr. Bates, with his tender sympathy for farmers, has read what an Englishman, invited to dinner at a farm house in Long Island, quite recently wrote home:

"I wonder how often in 'Merrie England,' a farmer with his family and two men servants, sits down to roast turkey, chicken pie, four or five vegetables, and cranberry pie, to say nothing of both whiskey and beer to drink."

Ireland has free trade, and suffering and want that beggars description.

In Glasgow thousands are on the verge of starvation, the workhouses so gorged no more inmates can be received; public charity taxed to its utmost, as never before. Of Glasgow Mr. Bright said: "Forty-one thousand families live in homes having only one room." Was it as bad under protection? Could it have been worse? Mr. Bright further said of Scotland: "There passes before my eyes a vision of millions of families—not individuals, but families—fathers, mothers and children, passing ghastly, sorrow-stricken, in never-ending procession from the cradle to the grave." Was it as bad as that under protection? Could it have been worse?

English and Scotch iron manufacturers get rich, with dividends of one hundred and twenty per cent., wrung from the heart's blood of their pauperized labor, to whom they pay about one-third the amount of wages, as is paid by the "masquerading monopolists" in America.

Mr. Bright corroborates what I assert. Recently he said:

"I know a gentleman who told me that his firm (shipowners) made profit of £10,000 (\$50,000) on a single cargo—of a single ship laden with wheat coming from San Francisco to this country. I know a gentleman who has large iron-works and collieries, and I recollect, in the year 1873, twelve years ago, he told me that in the last year, the dividend upon these works was 120 per cent.; that is, that for every £100 of capital that he had in the business during one year, he had cleared £120; and he said: 'Things are getting very bad indeed, for this year', and he smiled pleasantly as he said it, 'the dividend has fallen to 90 per cent.'"

Those are the men in England who reduce the wages of their labor, and "smile pleasantly." Are they "masqueraders," or oppressors of labor? It is possible to "smile and smile"—he can conclude the quotation.

Mr. Bates says:

"To argue that the citizen of the United States, commercial treaties and all other things being equal, as we must insist they shall be, cannot compete successfully with the British manufacturer, is but stuff and nonsense. The American citizen is always equal to the opportunity. Give him the opportunity and he will easily demonstrate his ability to be equal to any emergency."

The truth is, every time the American people have tried free trade or a very low tariff, they have miserably failed, and have never been "equal to the opportunity." Mr. Bates may cry "stuff and nonsense," but the assumption is destroyed by the facts. The British manufacturer "has beaten us every time." British manufacturers boast as to cotton goods: "If the United States were to abolish the duty on cotton goods we should shut up every one of their cotton mills in less than two years." As to iron, &c.: "If the

duty on pig iron was removed, we could close up every blast furnace in America, &c., &c." The same threats have been made as to woolen mills, &c., &c. Threats not made wildly, but by responsible parties, in some instances by members of Parliament, showing the aim and purpose of the English free trader, and his coadjuter, the American member of the English Cobden Club.

I am a firm believer in the doctrine first enunciated at Bunker Hill:

"There's nothing impossible with Americans."

But the possibility lies in that "sober second thought" of our American people, which judiciously applies a remedy to existing evils, called the American System which began with the first act of Congress, July 4, 1789, aptly termed the Second Declaration of Independence. Separation from the mother country had been secured through long and bloody war. The heroism, cool, determined, unflinching courage of American volunteers, their marches over frozen ground visible by the bloody tracks of their shoeless feet, had secured for their countrymen, and others from foreign lands, what was termed political independence. But nothing is more truly attested, than that after all the grand and righteous achievements of the Revolution, the American remained a bondsman to the manufacturing power of Great Britain. Nor could he, or did he emancipate himself from that bondage, until, armed by the Constitution, he sheltered the starving laborers and mechanics under the ægis of the tariff act "for the encouragement and protection of American manufactures." Then it was the American became "equal to the emergency." I have not space to elaborate, but will very briefly refer to the converse.

Persistence for a time in the "sophism" of nearly free trade, brought the country to such a low ebb, and so impoverished the American people by a depleted treasury, that they could not borrow money, even from free trade England, at twelve per cent. interest. The pettiest principality of Europe could borrow money at a far less rate of interest. Nay more, and far worse—and I hope Mr. Bates will refute these statements if he can—under nominal free trade, really but very low tariff, the United States Government could not raise the money with which to pay its President the salary due him, as a servant of the people. The President of the United States had to, and did, give his individual notes to the money brokers in Washington, who "shaved them at a heavy discount, they knowing that, as soon as the protective tariff was re-enacted, which was done, money would flow into the treasury and the notes become good.

Mr. Bates concludes his communication with: "LONG LIVE THE KING."

The affinity of free trade with royalty, and its antagonism to republicanism, has long since been well established. Free trade keeps laborers as subjects, in helpless, abject depression. On the other hand, a protective tariff helps "every laboring man in this country to better wages, to a more independent condition, and to a higher development of his faculties."—(*Inter-Ocean*.)

I trust I shall not be deficient in charity, or lacking in that respect due to every adversary, did I intimate that had Mr. Bates been living in the days just preceding the American Revolution, he would have been of those described by Thomas Jefferson, whose:

"Minds were circumscribed within very narrow limits by an habitual belief, that it

was their duty to be subordinate to the mother country in all matters * * * and to direct all their labors in subservience to her interests."

American protectionists, too, cry "Long live the king,"—not any European king, but our AMERICAN LABOR KING. Solon Chase says: "In America Labor is King." It was crowned by protective tariff, and regally robed. Webster claimed: "The Laborer of the United States is the United States."

Until labor decrees otherwise, it will so remain. So far, its votes have ever been cast for protection, and never for free trade!!

JOHN W. HINTON.

PAPERING, PAINTING AND VARNISHING.

While city people as a rule select the spring-time and early summer for renovating their houses, country-folk, who have leisure time during the winter season, often paint and paper their houses themselves at this time, thus saving a large expense.

In ordinary country homes three coats of paint are considered sufficient. The paint in common use for painting woodwork is chiefly composed of white lead, linseed oil and turpentine, with some "drier." The white lead gives a body to the paint and forms a soapy compound, by combining with the oil. The "driers" quicken the hardening. The linseed oil soaks into and fills up the pores of the wood. The turpentine is merely used to save oil and make the paint sufficiently thin to work easily. It evaporates quickly and affords no protection to the wood. Red lead is much employed with the priming coats, and for the first coat in painting iron-work. It sets hard and dries well. The proportion of ingredients in mixed paints depends upon the quality of the materials, the kind of surface and the degree of exposure. A colored lead paint is made by adding pigments to white lead base. When red lead is used the mixture does not require so much of the "drier."

The proportions of the ingredients for the different coats are approximately as follows: First, or priming coat, one gallon of oil to five pounds of white lead and drier as may be required. Two-coat work requires one gallon of oil to ten pounds of lead. Three-coat work the same quantity as for one-coat work. After the first or priming coat is put on, all holes or cracks should be stopped with putty.

In painting outside work exposed to the sun, sufficient turpentine should be added to prevent blistering and in cold weather to make it work freely. All knots should be shellaced before the first coat is put on. When colored paints are used each succeeding color should approach more nearly the final color. The pigments which are ground in oil are the best. White lead must be kept in close vessels, or the action of the air will give it a brown shade. White lead should not be used for painting iron-work. The best paints for iron-work are those in which the oxides of iron form the bases. The red oxide is commonly employed.

Zinc-white is used for inside work, but is unsuitable for outside work. Plaster which is painted should be smooth and free from bubbles or blisters, and should be perfectly dry. Plastered walls should be washed down with a distemper and left for some months before painting. Each coat, both on plaster

and wood-work, ought to be sandpapered smooth and all holes stopped before the next coat is put on.

For outside work drabs, grays, browns and reds are the most durable colors. Burnt umber and yellow ochre, mixed with white lead as a basis, make a drab of warm tint for outside work. Yellow ochre and Venetian red make a good buff. Indian red and indigo make a warmer shade of gray than lamp-black, which is usually used alone with the lead, for a gray. Prussian blue and yellow ochre make a pleasant shade of brown. Green may be formed by mixing Prussian blue and burnt sienna, or Prussian blue and raw umber, or with indigo and burnt sienna. Any of the above pigments which do not contain lead may be used for inside work. In general, it is not well to use too many colors in painting, as it adds to the expense, and has a tendency to cheapen the effect.

Varnishes made from amber, gum animé and copal are the most durable and are adapted to work which is exposed to the weather or that requires frequent cleaning—such as coaches and carriages and for the best joinery and fitting of houses. Turpentine varnishes are made from soft gums dissolved in turpentine. These dry quickly and are lighter than oil varnishes, but are not so durable. Lacquers are made with softer gum dissolved in alcohol. They dry more quickly and become harder and more brilliant than turpentine varnishes, but should only be used for cabinet or inside work.

Walls that are to be papered ought to be thoroughly dry before the paper is hung. Any defects in the surface of the walls should be remedied and the whole sandpapered and rubbed smooth with pumice stone. Then give a coat of size, which prevents the plaster from absorbing the paste. In repapering old walls, the old paper must be removed and the walls thoroughly scraped and cleaned to prevent any possibility of injury from the decomposition of the old parts.

We will send Harper's Weekly and the U. S. Miller for one year for \$4.10.

WHEN the Prince of Wales visited Ireland, a Land Leaguer shouted out in the hearing of His Royal Highness: "Down with him!"

"Whist!" exclaimed his companion. "Ye disremember Mr. Parnell told us to preserve an indignant brutality."

What Mr. Parnell did say was "dignified neutrality." There is another story related of an Irishman giving vent to his feeling by calling for "Three cheers for ould Pireland."

"Three cheers for hell," growled out a non-sympathizer.

"Oh, every man for the country he loves best," was the ready retort.

THAT wild young scapegrace "Prince John" Van Buren, on one of his visits to Washington, stopped at Willard's, where his father, the President, came and, after a kindly greeting, said: "John, I had hoped you would some time prove to be a worthy representative of our family, but I fear you never will; in fact, I am convinced that you will bring disgrace rather than reflect credit upon it." "Father," said John, "you may think because you happen to be President of the United States that you are something more than an ordinary man, but permit me to say that you will never be known in history except as the father of John Van Buren."

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Lock Box 175—

ATLANTA, GA.

UNITED STATES MILLER.

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MILWAUKEE, FEBRUARY, 1886.

We respectfully request our readers when they write to persons or firms advertising in this paper, to mention that their advertisement was seen in the UNITED STATES MILLER. You will thereby oblige not only this paper, but the advertisers.

MILWAUKEE AMUSEMENTS.

ACADEMY OF MUSIC—Performances every evening, Wednesday, Saturday and Sunday matinees.

GRAND OPERA HOUSE.—Performances every evening, and Wednesday, Saturday and Sunday matinees.

DIME MUSEUM—Performances every hour from 1 P. M. to 10 P. M. every day.

SLANSBY'S VARIETY THEATER—Performances every evening, and Thursday and Sunday matinees.

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THE directors of the Merchants' Exchange in St. Louis, have declined to grant the petition for the abolition of flour grades.

We will send you a copy of "Leffel's Construction of Mill-dams, and Bookwalter's Millwright and Mechanic," and "The U. S. Miller" for one year for \$1.30. Don't miss it.

SECRETARY MORGAN of the Merchants' Exchange, St. Louis, figures the production of St. Louis flour mills for 1885 at 1,838,782 barrels; for 1884 at 1,960,737 barrels, and for 1883 at 1,892,633 barrels. In addition to this 787,412 barrels of flour were made by outside mills belonging to St. Louis parties. In 1885 there was also made 488,786 barrels of corn meal, and 67,118 barrels of hominy and grits.

We have received from Col. W. L. Barnum, Secretary of the Millers' National Insurance Co., No. 205 LaSalle st., Chicago, Ill., a report showing the condition of the company's financial affairs Jan. 1, 1886. The total surplus over all liabilities is shown to be \$952,229.61. The total loss paid during the year 1885 amounted to \$122,805.67. Since its organization, about ten years ago, losses have been paid aggregating \$533,066.66. This condition of affairs is certainly pleasant to policy holders, and has only been secured by careful inspection and great care in taking risks.

We will send the U. S. Miller and The Milling Engineer for one year for \$2.00.

We have received the first number of *The North Dakota Farmer*, published at Jamestown, Dak. It is a handsomely printed and ably edited twenty-pages paper, and will, no doubt, represent the agricultural interests of Dakota better than they have ever been represented before by any Dakota publication. Success to *The North Dakota Farmer*.

The price of corn has either got to go up or the railroad tariff on corn to come down before much corn is shipped from points west of the Mississippi. With corn at 40c. per bush. in Chicago, and freight at 25c. per 100 lbs. from the river, the western farmer has little to gain by shipping his corn.

SENATOR PLATT of Connecticut, has introduced a bill to the Senate, which, if passed, will remove all local license charges on commercial travelers, commonly styled "drummers" in all parts of the Union. These local license laws have been the cause of great annoyance and expense to salesmen traveling in the South, representing firms from other States. The result of the abolition of these absurd laws will be the means of bringing the business men of the Southern States into closer business relations with those of Northern and Eastern States. We trust that the bill will become a law.

LATER.—The U. S. Supreme Court has decided that such restriction to trade as are referred to above are unconstitutional.

We hope that all of our subscribers, whose subscription expire with this number, will renew at once. Look over our list of combinations with other papers. You can save time and money by sending your orders to us.

A CONTRIBUTOR to the *Deutsche Rundschau*, published in Berlin, Germany, claims that the centre of gravity of the world's commerce is gradually moving from Great Britain via Germany to the United States of America. He claims that the commerce of England has declined seven per cent. in the last seven years, and that German commerce has increased proportionately, but that the advantage will finally settle down in the United States, which is now the greatest manufacturing country in the world. "The people of the United States," he says, "are not only able to feed themselves from the products of their soil, but they can also supply from their surplus a heavy British and Continental demand. They also have the raw materials of iron and cotton goods in abundance close to the place of manufacture, and thus possess a double advantage.

ALL persons connected in any way with the milling industry will find it to their interest to have a copy the UNITED STATES MILLER sent regularly to their address. We will send a sample copy of it free to all in the trade who may apply to us for a copy. You can examine it carefully, read our premium and book lists, and we believe that you will, after a fair inspection, feel that it is to your interest to subscribe. It only costs, with premium, one dollar per year. The UNITED STATES MILLER has been published nearly ten years, and the experience and knowledge gained by its publisher in that time is a sufficient guaranty of a valuable paper.

H. W. CALDWELL of Chicago, Ill., inventor of the Caldwell Conveyor, accomplished a feat in the mailing of catalogues never before attained by any one so far as our knowledge goes. He had directed and mailed in twenty-four hours 26,000 catalogues and all sent out at once. If you want to know how it was done, write him at No. 40 S. Canal street, Chicago, and he will explain.

THE Daisy Roller Mill Co. has been incorporated with a capital stock of \$100,000. The incorporators are E. P. Allis, L. R. Hurd, Edwin Reynolds and W. D. Gray.

MESSRS. FAIST, KRAUS & Co. will remodel and start up the mill they recently purchased of Herman Nunnemacher. The mill will be known hereafter as the "Duluth Mills" and will have a capacity of 800 barrels per day. It is a full roller mill and power is furnished by a fine steam engine.

For \$5.00 we will send Gibson's recent work on Gradual Reduction Milling, The Northwestern Miller and U. S. Miller for one year.

A Tale of Nine Cities

Is the euphonious title of a little book giving a brief description of the points of interest in the nine principal cities of the great Northwest and Far West, viz: Chicago, Milwaukee, St. Paul, Minneapolis, Council Bluffs, Omaha, Denver, San Francisco and Portland, Oregon. A correct colored map of each city is made a part of this instructive book, which is being distributed by the Chicago, Milwaukee & St. Paul Railway.

For a free copy, address A. V. H. Carpenter, General Passenger Agent, Milwaukee, Wis.

NOTES FROM BEYOND THE SEAS.

Mr. W. A. Gibbs, of Gillwell Park, Chingford, England, has invented a cylindrical grain drier, which is said to have many valuable features not found in other machines of a similar nature.

Mr. Julius Schleisinger, of Milwaukee, has established permanent headquarters at 59 Mark Lane, London, E. C., for the Milwaukee Dust Collector Co., the Cockle Separator Co., and the Superlative Purifier Co. He has met with remarkable success in introducing the different machines manufactured by the above companies into British and Continental flouring mills. He will be pleased to have his American friends call on him when visiting London.

British millers and bakers are complaining of the extensive introduction of American meal worms into that country. They say their native "bug" is satisfied with damp and musty flour to operate upon, but the Yankee pest is only pleased when he gets to work upon the finest brands of flour in the land.

The Germ Milling Co. own a patent for extraction of the germ by means of smooth rolls in the gradual reduction process, and they have brought suit for the alleged infringement of this patent against Messrs. J. & H. Robinson of Deptford, London, and also against several other extensive milling firms. This suit has been pending for a long time and has been a regular "Cochrane" case for the British Millers' Association and others. Indications now are that a trial or compromise will soon be reached.

Sweden has been a heavy buyer of German flour since October 1, 1885.

We have received a pamphlet from Mr. Eugene Kreiss of Hamburg, Germany, the Continental representative of the Geo. T. Smith Middlings Purifier Co. It seems that Messrs. Seck Bros., of Dresden, have brought out a purifier, which they call the "Reform," very similar to the Smith machine. Mr. Kreiss produces in his pamphlet strong arguments to show that Seck's improvements are rather disparagements to the machine. The Secks' retaliate in another lengthy pamphlet, and thus the purifier war goes gaily on in Deutschland. Both parties are selling lots of machines and taking in a beautiful harvest of "marks."

A contributor to an English paper, in a recent communication says:

"It is pleasant to note that the milling industry of this country, with all the obstacles in the way, is now in the front,—meaning those who have adopted the roller milling system. It is much to be regretted that a similar compliment cannot be paid the baking industry, and that London is behind many provincial towns in the manufacture of bread. Whether this is due to the larger consumption of foreign flours, inferior flours from the provinces, or flours from old musty wheat, are questions which individuals should have no difficulty in solving, and it is high time the British capital was in advance of this ignoble state of things. And however difficult it may be to break through the trammels of old-established routine, an effort

should be made to take the lead—her legitimate position. However inferior the quality of bread may be, consumers become habituated to it, and even prefer it to a better quality. But that is no reason why such ignorance should exist, or even be tolerated, in the present age of technical education."

A Bavarian (German) correspondent makes the astounding statement, that the damage done by lightning in that province has increased 300 per cent. during the past fifty years. It seems to us as if this was a misplacement of the electric fluid. Now, in Bavaria no one ever goes fast enough to get struck by an intelligent "streak o' lightning," while in this country we have 500,000 able bodied politicians that are daily hoping to have "lightning strike 'em."

The Bill for the construction of the North Sea Canal, which has now been laid before the German Parliament, describes the canal as being primarily destined for the use of the Imperial Navy. It will connect the Elbe estuary and the Bay of Kiel via Rendsburg, and cost 156,000,000 marks, whereof Prussia undertakes to contribute 50,000,000 and the Reich the rest.

Queensland, South Australia, Tasmania, Victoria, West Australia, New South Wales and New Zealand are preparing to unite as one Government, subject only to Great Britain. The provinces, if we may so term them, will have a territory nearly as large as the United States. They have little of common interest with the Mother Country, and it would not be surprising if they established themselves as an entirely independent nation in the course of a few years. Why should there not be a great republic at the antipodes?

The wheat crop of Russia for 1885 is quoted at 215,390,000 bushels, against 265,960,000 in 1884. The average from 1870 to 1881 inclusive is 197,848,000 bushels. The rye crop this year is quoted at 743,750,000 bushels, against 684,250,000 in 1884. The average from 1870 to 1880 inclusive is 570,000,000 bushels. The oat crop is quoted at 410,550,000 bushels, against 499,800,000 in 1884. The barley crop is quoted at 104,125,000 bushels, against 132,685,000 in 1884.

Messrs. Harrison & Co.'s flour mill at Port Adelaide, is the first in South Australia to be lit up by electricity. The electric light has already been introduced into several mills in New Zealand.

The losses to insurance companies by fires in English flour mills have been so great during the year 1885 that milling risks are no longer sought for. The Royal Insurance Company has given notice of its intention to avoid milling risks hereafter. The insurance companies claim that such risks do not pay.

JAPAN was added to the nations adopting the metre and kilo as official standards of measurement, at the recent meeting in Paris of the International Committee of Weights and Measures. The states who have adopted these standards now number twenty-two, with a total population of 469,000,000.

TIGHT BELTS.

A large quantity of belt is required to transmit a little power. The sooner we investigate and believe the above fact, the better it will be for our shafting, machinery and coal-heap. We may look at the fact as we please, it will bear it, and find that a slow-running belt, to carry a given power, must be very wide. If running at high speed, we must have the same number of square inches of belt passed over the pulley, but the belt need not be as wide to do it.

When a belt slips, the most natural action on the part of the attendant is to throw a handful of powdered rosin between belt and pulley. The next move, when rosin fails, is to tighten the belt. Often we find belts strained up until they are tight enough for fiddle strings, until hangers are pulled out of line, boxes cut and shafting sprung.

A certain machine company drive their works by long loose belts which claim attention from their very looseness. These belts are 10" to 12" wide, about 16 feet from pulley to pulley, and are slack enough to permit the upper or slack side of the belt to "bag" down 12" or 18", a plane passing through the two shafts being about 45° from the perpendicular.

If this machine company had followed the example of many power users, they would have used belts 5" or 6" wide, strained them very tight, and have been continually troubled by the belts breaking and wearing out. The belts above described, ran upon large pulleys (from 24" to 48") having a speed of 250 or 300 revolutions per minute.

Probably, these belts would have done one-half more work than was put upon them, but from the fact of being loaded light, they did their work with very little wear and tear. They needed very little looking after, save to keep them oiled and clean.

At the Novelties Exhibition at Philadelphia, a centrifugal pump was shown raising a very large quantity of water, and being run with a 1½" belt. Here, high belt-speed was used as a factor, but the little belt was strained very tight. It would soon give out, and need constant patching.

When putting up a machine to run by a high-speed belt, don't make the mistake of cutting down the width of the belt too much. Let it go wide enough to transmit the required power without being too tight.

A certain builder of "gauge" lathes built a lathe to make button-hook handles. The handles were about ¾" or 1" in diameter, and 14" long. When the belt was at its highest speed it ran over 4,000 lineal feet per minute, yet the belt was made 4 inches wide. Just think of it; a round sewing-machine belt would almost have done the work, yet here was a 4" belt. The builder of that lathe says he would do the same thing again, for the belt service was complete, there was no slip of belt, no excessive friction, and the lathe spindle always ran true and cool.

When we see a man putting on a 14" belt with clamps, and using a 24" monkey-wrench wherewith to screw up the clamp bolts; then we can say to ourselves that this man is doing a poor job.—By James F. Hobart in *The American Machinist* of January 9.

We will send the U. S. Miller for one year and Ogilvie's Handy Book for \$1.00.

NEWS.

BURNED.—Buck & Renie's mill at Homer, Mich.

BURNED.—Fullenweider & Co's mill at Salem, Iowa.

J. D. MOORE & Co., Fremont, O., millers, have assigned.

JOHN TUCKER, miller at Wichita, Ks., has made an assignment.

THE Eagle Star Mill & Grain Co. succeed Kaune Bros, at Breese, Ill.

RUSSELL & VOORHEES, Friendship, N. Y., have dissolved partnership.

HODD & CULLEN will soon have their mill at Stratford, Ont., completed.

G. H. FRAZER's 75-bbl. roller mill, at Morden, Man., has been completed.

D. B. Knight, of the milling firm of Knight & Smith at Boone, Ia., is dead.

A VERY large amount of flour is stored in Duluth, awaiting spring shipment.

BURNED, Valentine & Repy's mill at Salem, Neb. Loss \$30,000; insurance \$13,000.

L. R. MAYNARD, of Flora, Ill., is succeeded in business by T. H. Shepherd & Co.

F. DIETTES, Travare, Dak., has completed and started up his 100-bbl. roller mill.

LONG & GRISTWOOD, millers at Fenwick, Mich., succeed Herrick & Gristwood.

ENGLISH & ENGLISH's flour mill at Austin, is burned out. Loss \$5,000; insurance \$1,000.

A. SPINDLER, Woodland, Mich., is succeeded in the milling business by Snow Bros.

S. R. WILLIAMS & Co.'s mill at Lebanon, Tenn., was damaged about \$1,000 by fire, recently.

MARTIN & SONS have made extensive improvements to their oat-meal mill at Mt. Forest, Ont.

J. J. Girard, a Minneapolis miller has invented a dust collector to be used inside of purifiers.

WRIGHT, SCHNEIDER & STULTZ succeed Turk & Wright in the milling business at Alma, Mich.

THE mill of the Lakeside Milling Co., at Bingham Lake, Minn., was recently destroyed by fire. Loss, \$20,000.

A FAMILY in Omaha was poisoned by white lead, which in some mysterious manner found its way into the flour.

JAMES H. FRASER's saw and grist mill at Nelson, Man., burned recently. It will probably be rebuilt at once.

O. C. MORRILL is building a 50-bbl. mill at Little Falls, Minn. August Miller is building a 50-bbl. mill at Ashby, Minn.

HARDISTY & FRASER, millers, at Edmonton, Man., have dissolved partnership, and D. R. Fraser succeeds to the business.

CITIZENS of Ellendale, Dak., offer \$2,000 and a building site to any one who will put up a first-class roller mill at that place.

MESSRS. E. P. ALLIS & Co. have removed their Canadian headquarters from Stratford to No. 20 Wellington st., E. Toronto.

THE HUDSON BAY Co.'s mill at Edmonton, Man., was recently destroyed by fire, together with a large amount of grain. Loss \$50,000.

BURNED, Jan. 21, Guenther & Smith's flour mill at Hayton, Wis., with a considerable

amount of grain. Loss \$5,000; insurance \$1,800.

HENDERSON & PETERSON's steam flour mill at Muskegon, Mich., has been changed to the roller system, and has a capacity of 125 bbls. per day.

THERE are seven flour mills in Kansas City, Mo., employing 99 persons, with an invested capital of \$235,400, and paying \$203,000 wages during 1885.

THE Russian thistle, brought to this country by Mennonites in their seed wheat, is so thickly spreading in parts of Dakota as to cause serious alarm.

OTTERVILLE, Man., citizens are willing to furnish a good water-power, and cash bonus to secure the erection of a good flour mill, which is badly needed there.

THERE was a small explosion in the City Roller Mills, Winnipeg, Man., recently. Damage slight. All the Winnipeg mills are shut down at present and making repairs.

THE CUMMER ENGINE Co., have just received an order for three more of the Jonathan Mills' Universal Flour Dressers, from E. Goddard & Sons' Flour Mill Co., of St. Louis, who had five in use before, four of which displaced centrifugals.

MESSRS. HUNTLEY & HAMMOND, of Silver Creek, N. Y., have established a branch house in Minneapolis, where they are ready to fill all orders from western millers for bolting cloth, promptly. A. T. Shuler has charge of the Minneapolis house.

DURING 1885, there were, according to Dun's commercial agency, reported 10,637 failures in the United States, as against 10,968 for 1884, and the liabilities for 1884 were \$223,343,427, and only \$124,220,321 for 1885. A very creditable showing, considering the circumstances.

THE Railway Age figures up the railroads built in 1885 at 3,113 miles, less by 700 miles than that built in 1884. No year since 1878 has so low a record. Most of the year's work was done in the Southern States, and in the belt between the Missouri River and the Pacific States and Territories.

BURNED.—Jan 19, D. T. Finch & Son's flour mill at Middlebury, Barry Co., Mich. A grain elevator adjoining, containing 13,000 bushels of wheat and some flour was also burned. Loss estimated at from \$22,000 to \$25,000 with \$13,000 insurance. The loss is supposed to be the work of an incendiary.

A FIRM in Chicago is charged with importing potato starch as farina. The former is subject to a duty of 2 cents per pound, while the latter is admitted free. The imports were in bond via New York. A seizure of 200 bags potato starch was made, on which no duty had been paid, and it is reported that in all 1,400 bags have been discovered on which no duty was collected.

GRAIN ELEVATORS IN DAKOTA.—The following appeared recently in the Chicago *Inter-Ocean* as a special telegram from St. Paul, Minn.: "A company of Eastern capitalists is about to be organized for the purpose of erecting elevators along the various lines of railroad in North Dakota, which will be conducted on an entire new plan. They propose to furnish to each farmer a separate bin in which to store wheat, and in this way, when he is ready to sell he can always get the identical wheat which he delivered. They also propose

to loan money at 7 per cent. interest, to be secured by wheat in store. The gentleman who is working the matter has spent much time in Dakota, and is said to be quite confident of the success of his scheme. Just when they will begin building operations is not known, but it will probably be early in the spring."

THE Manitoba Milling and Brewing Company (Limited) has been incorporated with a capital stock of \$100,000, in shares of \$100 each. The business of the company is to be carried on in this province, with headquarters at Carberry, and will include the purchase of and manufacture of grain into flour, bran, shorts, etc., storing and cleaning, and such other business as is usually done by millers and proprietors of elevators, besides that of malting and brewing.

THERE are no less than five new roller-process flouring mills now about to be completed in Manitoba and the Territories. Two of these have already commenced to grind, and the remainder will be in operation in about a month's time. These mills have a capacity of from 100 to 150 barrels per day each, and are located at Regina, Qu'Appelle, Virden, Oak Lake and Morden. In addition to these, a stone mill at Fort Qu'Appelle is being changed to the roller system, and several mills are being agitated for at other points.

NEW MILLS—A roller mill at Coleman, Tex.; a roller corn mill at Pendletonville, Tex. by C. A. Boase; a 125 bbl. roller mill at Cuthbertson, Neb.; a 100 bbl. roller mill at Virden, Manitoba, by Willing & Dier; a roller mill at La Grande, Oregon; a new mill in place of one recently destroyed, by the Long Lake Milling Co. at Hubbard, Minn.; a 100 bbl roller mill at Cleburne, Tex.; a number of companies have been organized in Texas for the purpose of building roller flour mills.

THE Cummer Co. report their trade on the reels constantly on the increase, and that they are receiving many repeated orders. They have also just received orders for a 100 h.-p. engine with boilers, etc., complete, for Messrs. Stinnett, Rucker & Co., of Sherman, Texas, and for an engine of 170 h.-p., for G. W. Straight, of Chicago, Ill. Among their recent shipments are a 415 h.-p. engine to the Manchester print works, of Manchester, N. H.; a 160 h.-p. condensing engine to Cowden Bros. & Hoppe, of Hanna, Ind.; an 89 h.-p. engine to the Somersworth Machine Co., Dover, N. H.; and one of 90 h.-p. to Frank Baer, of Greensburg, Pa.

THE following are among the many orders received by the Case Manufacturing Co., Columbus, Ohio, since our last issue: From Stitt & Middlepaugh, South Pueblo, Col., for 2 pairs of rolls with patent automatic feed; from A. A. DeLoach & Bro., Atlanta, Ga., for 2 pairs of rolls and 1 No. 2 single purifier with automatic feed, to be shipped to J. B. Florence, Powder Springs, Ga.; from John Ewing, Shirleysburgh, Pa., for rolls; from Alex. Campbell, Senecaville O., for 1 No. 1 single purifier; from W. T. Pyne, Louisville, Ky., for rolls to be placed in the mill of M. V. Getty, Lexington Ind.; from Bonnot Bros., Louisville, O., for 10 pairs of rolls with patent automatic feed; one 5-reel scalping chest and 2 purifiers; from D. F. Allen & Co., Frankfort, Ind., for all the necessary rolls and other machinery for a roller corn

meal mill on the Case system; from Marshall, Kennedy & Co., Pittsburgh, Pa., for all the necessary rolls and other machinery for a roller corn meal mill on the Case system; from Blair & Woods, Hartstown, Pa., for 2 pairs rolls and 1 No. 1 single purifier with patent automatic feed; from Jackson Bros., Cawker City, Kan., for rolls, purifiers, scalpers, centrifugal reels, bolting reels, and all necessary machinery for a full roller mill on the Case system, using 12 pairs rolls with patent automatic feed; from J. M. Berry, Augusta, Ga., for 14 pairs of rolls with patent automatic feed, to replace rolls of other manufacture, the Case system of separation will be used in the construction of the mills; from the Simon Gebhardt & Sons Flour Co., Dayton, O., for 4 additional pairs of rolls with patent automatic feed.

A change has just been made in the well known machinery firm of G. S. Cranson & Son, of Silver Creek, N. Y., by which it is calculated to be a gainer in several ways. W. W. Huntley, formerly of Huntley, Holcomb & Heine, and now of Huntley & Hammond, and C. G. Hammond, of the last mentioned firm, have joined forces with Cranson & Son, and under the style of Cranson, Huntley & Co. will direct their energies toward the building up of an extensive mill-furnishing business, giving particular attention to the several buckwheat machines which Cranson & Son have been so successful with in the past. The new firm will immediately begin the enlargement of its shops to double their present capacity, adding a foundry among other things. Its trade in the Cranson roller buckwheat shuckers, and also its new scouring and polishing machine for buckwheat and grain are large and growing. A full line of all kinds of mill furnishings will be carried.

An esteemed contemporary contains an interesting article on "Mill Bookkeeping." The method is no doubt a good one but in actual practice, especially in large establishments, it is difficult to find any two sets of books kept exactly alike. Every bookkeeper has his own notions, which according to his idea are a little better than any other fellows.

RYE MILLING

The Hamburg Correspondent describes a new process for milling rye. Various attempts had been hitherto made so to separate the rye husk that the adhesive layer immediately beneath it, and which is so nutritious, would be incorporated with the kernel and preserved. With the machine in question the rye is cleaned from sand, etc., slightly moistened with water, and then the grains are fed into a "shelling machine." The friction under pressure of the wet grains with each other loosens the outer husk completely. After the shelling process the rye is brought under an "aspirator," which blows out the moistened woody fibre and exposes it for a short time to a strong air current that deprives it of more of its humidity, so that after the milling process, which lasts about eight minutes, it is dryer than at first. A great change in the composition of the kernel is said to be effected by this process. The bran is greatly reduced as compared with the unshelled grain, while at the same time there is no appreciable reduction in the proteins. The bread made from this rye is said to be of a lighter color and decidedly of a finer quality

than that produced from the unshelled, and thus possesses superior digestive qualities, as the bran particles not only prevent the gastric juice from coming into contact with the starchy matter under them, but also have an irritating effect on the intestines. The flour gains in keeping qualities by this process. The husks have no nutritive value, but may be utilized in paper making and for packing.

Dr. COWAN'S "Science of a New Life" should be read by every man twenty-one years of age. It is a scientific work in plain language that any one can understand, and is not an advertisement for any physician or medicine, and must not be confounded with another work bearing a similar name published by a Buffalo medical institution. See descriptive advertisement on another page.

DIRECTIONS FOR SETTING UP PUMPS.—Never use pipes of smaller size than that given in the tables; when long pipes are used, it is necessary to increase the diameter to allow for the increased friction, especially in regard to the suction pipes.

Use as few turns and angles on pipes as possible, and run every pipe in as direct a line as practicable. Bends, returns and angles increase friction more rapidly than length of pipe.

See to it that the pump has a full supply of water.

In pumping very hot water, always flood your pump by placing it so that it will be supplied from a head.

A gallon of water (U. S. standard) weighs 8 $\frac{1}{8}$ lbs., and contains 231 cubic inches.

A cubic foot of water weighs 62 $\frac{1}{2}$ lbs., and contains 1.728 cubic inches, or 7 $\frac{1}{2}$ gallons.

Doubling the diameter of a pipe increases its capacity four times.

Friction of liquids in pipes increases as the square of the velocity.

Each nominal horse-power of boilers requires 30 to 35 lbs. of water per hour.

To find the area of a piston, square the diameter and multiply by .7854.

To find the pressure in pounds per square inch of a column of water, multiply the height of the column in feet by .434.

To find the capacity of a cylinder in gallons. Multiplying the area in inches by the length of stroke in inches, will give the total number of cubic inches; divide this amount by 231 (which is the cubical contents of a gallon in inches), and the product is the capacity in gallons.

Ordinary speed to run pumps is 100 feet of piston per minute.

To find quantity of water elevated in one minute running at 100 feet of piston per minute. Square the diameter of water cylinder in inches, and multiply by four. Example: Capacity of a five-inch cylinder is desired. The square of the diameter (5 inches) is 25, which, multiplied by 4, gives 100, which is gallons per minute (approximately).

To find the horse-power necessary to elevate water to a given height, multiply the total weight of column of water in pounds by the velocity per minute in feet, and divide the product by 33,000 (an allowance of 25 per cent. should be added for friction, etc.)

We will send the U. S. Miller for one year and Ropp's Calculator for \$1.00.

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Don't order your Cloth until you have conferred with us; it will pay you both in point of quality and price. We are prepared with special facilities for this work. Write us before you order. Address, CASE MANUFACTURING CO. Office and Factory: Fifth St., North of Waughten, Columbus, Ohio.

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Short advertisements will be inserted under this head for One Dollar each insertion.

WANTED—A practical Oatmeal Miller, one who understands his business and is willing to attend to it. Can receive additional information by calling on, or addressing CHARLES D. DANA, 10 State St., Chicago, Ills.

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CHANGED * HANDS.

THE ST. JAMES HOTEL, at Stevens Point, which is well and favorably known to the traveling public has recently changed hands. The present proprietor, Mr. Warren D. Fox, of the famous Fox House, Portage, has taken charge, and will make it second to none in the State.

GANZ * & * CO.,

Budapest, Austria-Hungary.

We are the first introducers of the Chilled Iron Rollers for milling purposes, and hold Letters Patent for the United States of America. For full particulars address as above.

[Mention this paper when you write to us.]

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TESTING LUBRICATING OIL.

Lubricating oil is a very important item in locomotive service, and one which often tries the patience of the purchasing agent as well as the engineer, unless the agent has fixed on one source of supply and has the grit to say No to the multitude of drummers from the thousand and one manufacturers, doctors, and producers of oil, who, like the Irishman's flea, are always on hand, every one with the best, at a few cents per gallon less than the man who preceded him.

I send you a sketch of a simple machine we rigged up out of part of an old drill press which has done service for years.

This oil tester, though making no pretensions to style or elaborate workmanship, was a sort of air-brake on the glib tongue of many a young man, and sometimes staggered the old ones. I remember one day a fine young man came into the machine department with a note from the purchasing agent, asking to have Mr. Blank's samples of oil tested, and report sent over to office.

This young man professed to be delighted to come across practical men, etc., and how gladly he would show the value of his wares. The first sample was put on the journal of machine, weight on lever adjusted, thermometer put in, time and temperature taken, and off she goes. But it was very soon apparent that oil No. 1 was not the kind to blow about, as the temperature rose 70° in five or six minutes. I told him that was not the kind we wanted. He handed out another bottle. The machine was cooled, cleansed, and another trial started, but he suddenly remembered something he forgot at the hotel, would be back in a few minutes. He forgot to come back.

This machine was not built to any special scale of dimensions, but after being run awhile to smooth everything nicely, a test of sperm oil was made; also of tallow and cylinder oil. The sperm oil was considered a standard to govern other tests, and the oils that came nearest to sperm, or run longest with the least rise in temperature, were considered best. The lever had $\frac{1}{4}$ " hole drilled through in center, also in top brass to within $\frac{1}{4}$ " of journal to insert bulb of thermometer, which cost 20 cents.

A record of test, with name of oil, name of manufacturer, price of oil, gravity, etc., was filled out with data as follows:

Temp. at start.	Time.	Temp. at stop.	Time.	Result.
50°	9.10	120°	9.40	Rose 70° in 30 min. Good.

Some oil would rise 70° in 7 minutes; other oil would run 90 minutes and not rise 50°. In this way we soon found who had the good oil. The whole machine did not cost over seven or eight dollars. No limit was made to the oil used on journal. This machine saved us lots of trouble, as men with light hydrocarbon oils gave us a wide berth.

—By J. J. Bingley in the American Machinist.

"Don't you think," said Mrs. Keeper, "that when Adam realized the vastness of the world into which he had been ushered, he must have had a great deal on his mind?"

"Well," responded Mrs. Blunt, "from the photographs I have seen of him, I should say that whatever he did have on must have been on his mind."—Troy Press.

S. E. WORRELL'S "WEB" DRIER.

The accompanying illustration shows a new invention, for which a patent has been allowed, for drying brewer's grains, distillery slops, starch refuse, and substances of a similar character, which from their glutinous nature, cannot be successfully operated upon by existing drying machines. It is also well adapted for damp grains of all kinds. The patentee, Mr. S. E. Worrell, who has an extended experience with drying machinery, and is the inventor and maker of a combined drier and cooler which has been very successful on grain, has made extended drying tests of the above-mentioned materials on his cylinder machine, but the results were not satisfactory from two causes: first, the substance "balling," and secondly, adhering to the hot metal surfaces. The "Web" drier was designed with the view to and does entirely overcome these serious objections. This is accomplished by acting on the material without agitating it.

The machine is simple, and a few words, with the aid of the cut, will clearly explain its construction and operation. It consists of an endless web of galvanized wire cloth drawn over two large rollers, one journaled at each end of the drier. The fire box is underneath in the middle; from both sides of this extend

be removed from the interior of the heating tubes while the machine is in operation. Any kind of fuel can be used. A very effective system of drainage is provided for disposing of the condensed water that collects on the interior of the iron cover. The action is continuous and only requires the attention of one man for supplying the fuel. The inlet and discharging openings are furnished with self-closing gates, and no hot air can escape without doing its work. Motion is transmitted to the endless web by the worm gearing shown at the right end.

In operation the material to be dried is supplied to the hopper seen at the left of the cut; in the bottom of this hopper is a device for disintegrating and spreading the damp material to an even thickness across the entire width of the upper wire cloth; this carries it into the machine where the drying process commences. This is accomplished by the hot air being drawn up through the meshes of the web and the interstices of the material, the latter laying in a loose, fluffy condition allows the air to freely circulate between the damp particles, thus absorbing the moisture which is carried up with it and discharged through the blower. The rapidity of this action will be understood by those



WORRELL'S GRAIN DRIER.

a number of cast-iron heating pipes through which the hot gasses of combustion pass into the soot boxes at each end of the machine, and from thence into the two upright pipes seen in the cut. The entire furnace is covered with iron dust shields to prevent the scorching of the small particles of the material being dried that may drop down through the wire cloth. The whole heating arrangement is surrounded by a brick wall, which is an excellent non-conductor of heat, therefore well adapted for this purpose. The top of the apparatus consists of a close-fitting sheet-iron cover, to which is connected the suction spout of a powerful exhaust fan. This blower greatly accelerates the upward movement of the hot air, which it will, of course, be understood is the drying agent, and it has been clearly demonstrated that this is the best and most economical agent for removing moisture from damp material of a granular nature. The numerous small openings in the bottom of the brick work are gates for regulating the distribution of the air.

One of the most important features of this drier is the novel construction of the furnace, which, while it presents an unusually large amount of heating surface, is provided with the means of producing a regular radiation of the heat, and is so arranged that the soot can

who know what a great affinity hot air has for water. The drying process is in this manner continued until the material reaches the opposite end of the machine, where it is discharged in a thoroughly dry condition. Of course the damper the substance the longer it must remain in under the influence of the hot air currents, and *vice versa*, so provision is made for graduating the movement of the web to the requirement of the substance being dried. A revolving brush is placed under the discharging roller for removing any particles that may adhere to the wire cloth.

This machine is very durable, no part being subject to much wear except the web, which can be renewed at small expense. A number of "idlers" are supplied for supporting the weight of the wire cloth and its load, and means are provided for taking up the slack in the web while the drier is in operation. While the cut is an excellent representation of this machine, its great reduction prevents showing a number of small but important details.

Any further information desired relating to this machine can be obtained by writing to the inventor. Mr. S. E. Worrell, Hannibal, Mo., who will be pleased to answer any inquiries for interested parties, and to him such are referred.

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PUBLISHED MONTHLY.

OFFICE NO. 124 GRAND AVENUE, MILWAUKEE.

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MILWAUKEE, FEBRUARY, 1886.

ANNOUNCEMENT:

WM. DUNHAM, Editor of "The Miller," 69 Mark Lane, and HENRY F. GILLIS & Co., 449 Strand, London, England, are authorized to receive subscriptions for the UNITED STATES MILLER.

We send out monthly a large number of sample copies of the UNITED STATES MILLER to millers who are not subscribers. We wish them to consider the receipt of a sample copy as a cordial invitation to them to become regular subscribers. Send us One Dollar in money or stamps, and we will send THE UNITED STATES MILLER to you for one year. SEE COMBINATION OFFER ON OTHER PAGES.

The United States Consuls in various parts of the world who receive this paper, will please oblige the publishers and manufacturers advertising therein, by placing it in their offices, where it can be seen by those parties seeking such information as it may contain. We shall be highly gratified to receive communications for publication from Consuls or Consular Agents everywhere, and we believe that such letters will be read with interest, and will be highly appreciated.

TO ADVERTISERS.

Milwaukee, Wis., Feb. 1, 1886.

To Those Interested in the Flouring Trade:

THE UNITED STATES MILLER is now in its tenth year, and is a thoroughly established and much valued trade paper. It has a large regular list of domestic and foreign subscribers. It is sent monthly to United States Consuls in foreign countries, to be filed in their offices for inspection by visitors. It is on file with the Secretaries of American and European Boards of Trade for inspection of members. Aside from the above, thousands of SAMPLE COPIES are sent out every month to flour mill owners who are not subscribers, for the purpose of inducing them to become regular subscribers, and for the benefit of those advertising in our columns. Every copy is mailed in a separate wrapper. Our editions have not been at any time since January, 1880, less than 8,100 COPIES each, and are frequently in excess of that. We honestly believe that the advertising columns of the UNITED STATES MILLER will bring you greater returns in proportion to the amount of money invested than any other milling paper published. Advertisers that have tried our paper for even a few months have invariably expressed themselves well satisfied with the results. Our advertising rates are reasonable. Send for estimates, stating space needed. The subscription price of the paper with premium is One Dollar per year. Sample copy sent free when requested. We respectfully invite you to favor us with your patronage. We shall be pleased to receive copies of your catalogues, and also trades items for publication free of charge. Trusting that we may soon be favored with your orders, we are,

Yours truly,

UNITED STATES MILLER.

E. HARRISON CAWKER, Publisher.

Affidavit Concerning Circulation.

STATE OF WISCONSIN, ss.
MILWAUKEE COUNTY.

E. HARRISON CAWKER, editor and publisher of the UNITED STATES MILLER, a paper published in the interest of the FLOURING INDUSTRY, at No. 124 Grand Avenue, in the City of Milwaukee, and State of Wisconsin, being duly sworn, deposes and says that the circulation of said paper has at no time since January, 1880, been less than FIVE THOUSAND (5,000) copies per month; further, that it is his intention that it shall not in the future be less than FIVE THOUSAND copies each and every month.

Sworn to and Subscribed before me at Milwaukee, Wis., this 25th day of November, A. D. 1885.

E. HARRISON CAWKER,

G. McWHORTER,

Justice of the Peace.

THE total immigration to the United States for December 1885 was 11,512.

A MAINE man runs a wind-mill by steam-power, and a Milwaukee man runs one by water-power, so that the arms go around whether the wind blows or not. Both are for ornamental purposes in landscape gardens.

UNITED States Circuit Judge Brewer recently made a decision of great importance. He decided that where a person was engaged in the manufacture of beer while it was legal to do so, he could not be prohibited from continuing the manufacture by a state law without first being paid the value of the property destroyed by reason of such prohibition. This was in the case of the State of Kansas against John Wallraff, of Lawrence, Ks.

We will send St. Nicholas Magazine and the U. S. Miller for one year for \$3.60.

A FEW months ago an employe of the Milwaukee Dime Museum lay upon his death-bed. His comrades made up a purse and ascertained the exact expense of the funeral to be, and told him that they had enough to pay for everything and three dollars over. "Now," said the spokesman, "shall we spend the three dollars going out to the buryin' or comin' back?" The dying man seemed to meditate for a few moments, and then answered slowly and with difficulty: "Spend it—going—out—boys—for—I shan't be with you—coming—back." He then turned his head slightly on his pillow and fell asleep forever.

BRADSTREET'S, in an article entitled "The World's Wheat Supply" (published Jan. 30), estimates that all the available wheat from exporting countries, except the United States will be required by other countries than Great Britain; that in all probability Great Britain will require 45,000,000 bushels of United States wheat before July 1, which will leave our total supply July 1 of wheat, visible and invisible, at only about 50,000,000 bushels, or what is appropriately termed, a "famine reserve." If these figures are approximately correct, and they appear to have been compiled with great care—may we not look for an early and considerable advance in the price of wheat?

We will send the U. S. Miller and American Miller for one year for \$1.50.

At about 8 A. M. Sunday morning January 10, fire was discovered in the boiler-room of J. B. A. Kern's immense flour mill on Commerce street, but fortunately it was extinguished before doing a great deal of damage. The fire was so located as to be very difficult of access, but by hard work it was reached and extinguished before any very great damage was done. Mr. Kern's mill is the largest in this state, and it would indeed be a great loss to Milwaukee flouring interests to have it destroyed.

We will send you a copy of "Leffel's Construction of Mill-dams, and Bookwalter's Millwright and Mechanic," and "The U. S. Miller" for one year for \$1.30. Don't miss it.

We will send The Milling World (weekly) and the U. S. Miller for one year for \$2.00.

Under date of Jan. 18, 1886, Messrs. Wm. Klein & Co. of Liverpool, England, write us as follows: The flour trade is steady with fair retail demand. Stocks of foreign flour are not heavy, and were it not for country flour being pressed on the market at extremely low figures, there would be a good show of buoyancy both in price and demand, meanwhile, however, many English mills are at last being shut down or run on short time, and the present outlook is encouraging; the following may be said to represent fairly the present position. During the last three weeks although the whole community of flour and wheat manipulators on both sides of the Atlantic, with few exceptions, has been on the Bear tack, and although backed up by an almost unprecedented stagnation of business, prices for flour can only be quoted a few cents down in America and a bare 6 pence per 280 lbs. lower on this side; the rise so long expected, may not come at once, but if prices remain so steady when the whole trade is bearish, there is the probability almost amounting to a certainty that when once the current is turned, and the Bulls are in the majority, prices will be run up 25 per cent. over their present values. Dealers and Bakers will do well therefore, to replenish their stocks while they are able to do so at present low level. Prices cannot well go lower and may go up many shillings before the month is out.

We will send the U. S. Miller and The Milling Engineer for one year for \$2.00.

We will send the U. S. Miller for one year and Ogilvie's Handy Book for \$1.00.

MORE TROUBLE AHEAD FOR MILLERS.

Patent suits have not bothered the millers in this country for so long a time that many have almost forgotten the trials endured in the past, but it now looks as if there was going to be a "right smart bit of a fight" over the R. L. Downton patent. We are reliably informed that R. L. Downton, by his attorneys, Messrs. Parkinson & Parkinson, the widely-known Cincinnati patent lawyers, have commenced suit against a wealthy milling firm in Ohio for infringement of Downton's patent, and are preparing to commence suits in St. Louis and at several other points.

The patent on which suit is brought, is No. 255,160, and was granted to R. L. Downton, March 21, 1882, and contains the following clauses:

1. The herein described process of reducing grain to flour and middlings, consisting in passing it through a series of sets of rolls, revolving at different speeds, and in the same direction, at the point of their nearest approach to contact, and of successive degrees of fineness of dress, the first part of said series of rolls having a dress of round corrugated oval flutes, and the latter part of said series having a dress of sharp or serrated flutes, arranged at an inclination to the axis and through bolts arranged intermediate of each set, and the succeeding set of rolls substantially as, and for the purpose described.
2. In the manufacture of flour and middlings, a series of sets of rolls of successive degrees of fineness of dress, arranged to revolve in the same direction at the point of their nearest approach to contact, and at different speeds, the first part of said series of rolls having a dress of round or oval flutes,

and the latter sharp or serrated flutes, arranged at an inclination to the axis, in combination with bolts, arranged intermediate of each set, and the succeeding set of rolls, substantially in the manner as, and for the purpose herein shown and described.

The officers and members of the Millers' National Association will, no doubt, look after their interests as a body. There is only one of two things to do—FIGHT OR COMPROMISE.

CAWKER'S FLOUR MILL DIRECTORY for 1886 shows the number of mills in the various States and Provinces as follows: Alabama 295; Arizona 10; Arkansas 198; California 199; Colorado 37; Connecticut 189; Dakota 87; Delaware 78; District of Columbia 7; Florida 23; Georgia 364; Idaho 16; Illinois 806; Indiana 863; Indian Ter. 6; Iowa 566; Kansas 426; Kentucky 488; Louisiana 33; Maine 167; Maryland 300; Massachusetts 223; Michigan 640; Minnesota 359; Mississippi 188; Missouri 713; Montana 18; Nebraska 210; Nevada 16; New Hampshire 140; New Jersey 344; New Mexico 29; New York 1,536; North Carolina 682; Ohio 1,135; Oregon 121; Pennsylvania 2,396; Rhode Island 36; South Carolina 190; Tennessee 536; Texas 512; Utah 87; Vermont 189; Virginia 506; Washington Ter. 49; West Virginia, 360; Wisconsin 653; Wyoming 1. Total in United States 16,950. Total in Dominion of Canada 1,339. Grand total in United States and Canada 18,289.

The Grand total shown in the 1884 Directory was 25,050. This shows an apparent decrease of 6,761 in the number of American flouring mills.

This needs a word of explanation. The United States Census for 1880 reported about 25,000 mills in the United States. In making that census every little mill that ground cornmeal, or feed even, was no doubt included. In Cawker's Directory for 1884 every thing was included that we had reason to believe made a business of grinding grain, no matter how small a concern it might be. In the 1886 Directory the plan has been to include only establishments manufacturing flour from wheat and rye, and cornmeal and oatmeal mills of some considerable importance. In the Southern States there are innumerable cotton gins and thousands of saw mills, and probably the majority of these have a portable grinding mill of some sort for grinding cornmeal, feed etc., and these can certainly not be considered flouring mills from a trade point of view—to say the least they are not such establishments as general mill-furnishers, flour and grain brokers, flour exporters and importers, transportation and insurance companies, etc., desire to reach, and for whose use Cawker's Directory has been compiled.

Judging from what we have learned from a large correspondence, from interviews with manufacturers and commercial travelers constantly visiting mills in all sections of the country, we believe the capacity of the flouring mills in the United States for making good flour is greater to-day than ever before, but there is no doubt in our mind but what there is a considerable decrease in the number of establishments in actual operation, though by no means as great as the figures above, at first glance and without explanation, would indicate.

We will send the Deutsch-Amerikanische Mueller and the U. S. Miller for one year for \$1.50.

A SLY DODGE.—MILLERS BEWARE.

Millers will remember that not long since, the Secretary of the United States Treasury, made a ruling, making it easy for millers exporting flour in jute sacks to recover a Drawback on them. The following letter from Mr. S. H. Seamans, Secretary of the Millers' National Association, will show that the party or parties, whose greed was thwarted by the straight-forward, business-like ruling of the United States Treasurer, is quietly trying to defeat that ruling, by means of a neat little clause slyly added to a bill, which might very easily slip through Congress and become a law, if the attention of Congressmen was not specially called to it.

NATIONAL MILLERS' ASSOCIATION.
SECRETARY'S OFFICE.
MILWAUKEE, WIS., FEB. 4, 1886.

DEAR SIR:

I desire to call your attention to the paragraph that has been inserted in a bill introduced Feb. 1st, in the House of Representatives by the Hon. ABRAM S. Hewitt, of New York, which reads as follows:

"Drawback is extended to cover the whole amount of duty paid and proof of the landing abroad shall be furnished. When the drawback is less than \$100,000 the fee for the consular certificate shall not exceed 50 cents."

This, of course, reads very innocently, but the practical effect of it would be to kill the collection of drawback on flour bags, as I will try to demonstrate to you.

"Proof of landing abroad," as understood in customs laws, must consist of the sworn declaration of the merchant to whom the merchandise is consigned and a certificate of the master and mate of the exporting vessel, and the merchants and the master and the mate must all appear before the United States Consul at the port of delivery. In the exportation of large quantities of flour bags made up of innumerable small shipments from various millers, and invariably consigned to the order of the millers themselves, the task of hunting up at the port of delivery say, for example, Liverpool, every man to whom the flour can finally be delivered, and of then getting the master and mate of the steamer to go around with such consignees and execute innumerable certificates, would be found absolutely impracticable in the conduct of business. The necessity alleged for such certificate is proper proof that goods entered for drawback have left the United States, and been landed beyond the jurisdiction of this country. We maintain and we believe, no sensible man can gainsay it, that the filing at the Custom House of the export B. L., which can always be verified and compared with the manifests of the exporting vessel at the pleasure of the Customs officials, is full and ample proof of export, such as any business man or bank would accept for like purposes, and which should be perfectly satisfactory to the Government. In fact, it is to-day perfectly satisfactory to the Government officials and we much doubt, if the Treasury Department is responsible for the paragraph in the proposed law that we call your attention to. In our opinion, it has been slipped in with the sole design of thwarting the flour bag drawback, and in the hope that no parties interested would happen to see it until it became a law.

I should advise you to at once notify such representatives, and especially such members as are on the Committee of Ways and Means, of the true import of this paragraph, and the disastrous effect it would have upon the milling interests. It reads so innocently and looks so plausible that unless our representatives have their especial attention called to it, we doubt whether they can catch its true application.

We trust you will give this important matter your earnest and speedy attention.

Yours Respectfully,

S. H. SEAMANS, Secretary.

Rules for Engineers and Firemen, for the management and care of Steam Boilers, as adopted by the Hartford Steam Boiler Inspection and Insurance Company.

1. **CONDITION OF WATER.**—The first duty of an engineer, when he enters his boiler-room in the morning, is to ascertain how many gauges of water there are in his boilers. *Never unbank nor replenish the fires until this is done.* Accidents have occurred, and many boilers have been entirely ruined from neglect of this precaution.

2. **LOW WATER.**—In case of low water, immediately cover the fires with ashes, or if no ashes are at hand, use fresh coal. Don't turn on the feed under any circumstances, nor tamper with or open the safety valve. Let the steam outlets remain as they are.

3. **IN CASES OF FOAMING.**—Close throttle and keep closed long enough to show true level of water. If that level is sufficiently high, feeding and blowing will usually suffice to correct the evil. In cases of violent foaming caused by dirty water or change from salt to fresh, or *vice versa*, in addition to the action above stated, check draft and cover fires with fresh coal.

4. **LEAKS.**—When leaks are discovered they should be repaired as soon as possible.

5. **BLOWING OFF.**—Blow down, under a pressure not exceeding 10 lbs. Where surface blow-cocks are used, they should be often opened for a few moments at a time. The blow-off valve should be opened wide once a day, oftener if the water contains much sediment. The time required to open wide and close the valve is long enough.

6. **FILLING UP THE BOILER.**—After blowing down, allow the boiler to become cool before filling again. Cold water pumped into hot boilers, is very injurious from sudden contraction.

7. **EXTERIOR OF BOILER.**—Care should be taken that no water comes in contact with the exterior of the boiler, either from leaky joints or other causes.

8. **REMOVING DEPOSIT AND SEDIMENT.**—In tubular boilers the hand-holes should be often opened, and the collections removed from over the fire. Also, when boilers are fed in front and blown off through the same pipe, the collection of mud or sediment in the rear end should be often removed.

9. **SAFETY-VALVES.**—Raise the safety-valves cautiously and frequently, as they are liable to become fast in their seats, and useless for the purpose intended.

10. **SAFETY-VALVES AND PRESSURE-GAUGE.**—Should the gauge at any time indicate the limit of pressure allowed, see that the safety-valves are blowing off.

11. **GAUGE-COCKS. GLASS GAUGE.**—Keep gauge-cocks clear, and in constant use. Glass gauges should not be relied on altogether.

12. **BLISTERS.**—When a blister appears there must be no delay in having it carefully examined, and trimmed or patched, as the case may require.

13. **CLEAN SHEETS.**—Particular care should be taken to keep sheets and parts of boilers exposed to the fire perfectly clean, also all tubes, flues and connections well swept. This is particularly necessary where wood or soft coal is used for fuel.

14. **GENERAL CARE OF BOILERS AND CONNECTIONS.**—Under all circumstances keep the gauges, cocks, etc., clean and in good order, and things generally in and about the engine and boiler-room in a neat condition.

OUR EXPORT OF BREADSTUFFS.

The total value of exports of breadstuffs from the United States for the twelve months ending Dec. 31, 1885, was \$129,757,260. The exports for the year 1884 were valued at \$147,813,403.

During the year 1885 there were exported 9,548,358 barrels of flour and 52,702,036 bushels of wheat. During the year 1884 9,047,071 barrels of flour and 80,627,215 bushels of wheat were exported. These figures are taken from latest official reports and show that our exports of flour are constantly increasing, while our wheat export is decreasing. This is well.

ITEMS OF INTEREST.

THE recent demand for English hansom cabs has disclosed the fact that the wheels imported there are of American make. Buyers here have therefore actually paid the cost of freight to and from London, and duty on their re-importation of these articles manufactured in their own country.

THE Osage orange is the most durable timber that grows in America, and is a wood that shrinks and swells so little by changes of dry and wet that it is not perceptible. It is said wheels made of the Osage will last for fifty years without paint or shelter.

RUSSIAN COMPETITION.—Leo Weltz, a prominent horticulturist of Ohio, and a member of the State Board of Agriculture, who went abroad several months ago, has returned, and is in Washington. He brought back with him four varieties of what the Russians consider their very best milling wheat. He also brought the information that Russians are devoting themselves with great earnestness to wheat raising, and with improved methods and these new varieties of seed they expect to regain their lost prestige and supply the European markets to the exclusion of the American product. Mr. Weltz says that wheat raising is the great question in Russia now. The farmers there are even giving up rye to devote their lands to wheat. Mr. Weltz brought over quantities of Russian oats and barley of varieties which he thinks are better than the farmers here have. The Agricultural Department at Washington city will take seeds and try them, making general distribution in due time, if the results of experiments are encouraging.

A NON-CONDUCTING FABRIC introduced by William P. Adams, Brooklyn, N. Y., is formed of a layer of asbestos felt, lined or faced on one side by pliable-canvas which has been rendered fire-proof by saturation in a solution of tungstate of soda and on the other by a facing of asbestos cloth. Upon the canvas backing a layer of close but pliable felt is laid, and over this is placed a facing of durable canvas rendered fire-proof, also by saturation in a solution of tungstate of soda. These are basted and quilted together to unite them in an integral fabric.

OIL PAINT FOR FLOORS.—For the painting of floors with oil paint we should, says the *Builder and Wood-worker*, only such as contain earthy coloring substances, and no lead, as all paints containing the latter wear off too easily. A floor that is covered with oil paint, and which is comparatively easily rubbed off, can safely be considered to contain lead. Lead is generally added on account of its superior density and body, and also being much more easily applied than most other substances. Even varnish that has been prepared by the use of litharge is objectionable on account of being too readily worn off. Two coats of paint are usually employed, and care should be observed not to apply the second coat before the first is fully dry. If it is desired that the floor should present a varnish-like lustre, the following may be employed, whereby the paint becomes even more durable: Dissolve two parts of shellac in eight parts of alcohol of about eighty per cent., and add to it one quarter of a part of camphor. When the whole has been completely dissolved, it can be filtered or strained through a

cloth in order to separate the suspended impurities. With this lac the floor is painted over once or twice as may be required. By the application of the lac, the paint adheres much better, and is not so easily worn, as though it were directly exposed; and when the lac has been partially removed, all that is necessary is to renew the simple application of the varnish.

KANSAS lands in the last ten years have yielded products valued at the enormous aggregate of \$1,046,282,364. Yet it is one of the youngest of the States. In 1883, the corn crop was nearly double that of any other State. It stands fifth in the amount of wheat grown.

BRADSTREETS' of Dec. 19, contains a very comprehensive article on the subject of boycotting. From these reports it appears that 237 cases have occurred in the United States during the last two years. Bradstreets' says:

The following specially prepared table contains a classified list of boycotts within two years, showing the grand totals of claimed successes, admitted failures, and others:

THE BOYCOTTED.

	TOTAL NO.	CLAIMED SUCCESS.	ADMITTED FAILURE.	STILL ON.
Newspapers.....	45	13	10	22
Hat manufact's and dealers.....	22	4	..	18
Cigar manufact's and dealers.....	26	11	5	10
Carpet manufact's and dealers.....	13	..	1	12
Clothing manufact's and dealers.....	14	1	..	13
Nail manufact's and mills.....	10	..	..	10
Dry goods dealers.....	7	..	..	7
Boot and shoe mfrs and dlrs.....	7	..	1	6
Stove makers and dealers.....	5	3	..	2
Flour mills.....	3	1	..	2
Hotels and public houses.....	4	3	..	1
Breweries.....	4	3	1	..
Printers, etc.....	3	..	..	3
Bakers.....	2	1	1	..
Excursion steamers.....	5	5	..	..
Silver factory, watch cases.....	3	..	..	3
Tailors.....	4	2	..	2
Theatres (musicians).....	2	2	..	..
Publishers.....	2	2	..	..
Street railway.....	1	..	1	..
Steamship company.....	1	1	..	..
A special beverage.....	1	..	..	1
Postmasters.....	2	2	..	..
Starch maker.....	1	1	..	..
Baking-powder maker.....	1	1	..	..
Washing preparation maker.....	1	1	..	..
Can maker.....	1	1	..	..
Stereotype plates.....	1	..	..	1
Pianos and organs.....	1	..	..	1
Broom manufacturer.....	1	..	1	..
Cooper works.....	1	1	..	..
Box manufacturer.....	1	..	1	..
Kuit goods manufacturer.....	1	..	1	..
Chinese employers.....	41	40	1	..
Totals.....	237	99	24	114
Excluding Chinese boycotts.....	196	59	23	114

SINCE the obelisk in Central Park, New York was smeared with paraffine to prevent its disintegration from atmospheric changes, the application of this substance to buildings of marble or stone as a preservative is becoming quite common. The latest example is the Exchange Building, on Broadway, just below Wall street, which has been treated with acids over its entire surface as a cleansing process. Mechanics are now going over the entire surface of every block, column, sill and pediment with a sort of brazen blow-pipe from which three strong pencils of flame are projected against the marble for the purpose of heating it. This done the paraffine is applied with a small brush. The buildings appear to be thoroughly renovated by this treatment.

THE *Scientific American* says: "The best remedy for bleeding at the nose, as given by Dr. Gleason at one of his lectures, is in the

vigorous motion of the jaws as if in the act of chewing. In case of a child, a wad of paper should be inserted between the teeth, and the child told to chew it hard. It is the motion of the jaws that stops the flow of the blood. This remedy is so very simple that many will feel inclined to laugh at it, but it has never been known to fail in a single instance, even in the severest cases."

[Now if this thing would work t'other way, i. e. if a vigorous working of the jaws would produce bleeding at the nose, what pleasant companions some of our friends would be.—ED. U. S. MILLER.]

We will send Harper's Magazine and the U. S. Miller for one year for \$4.20, or the Century Magazine and U. S. Miller for \$4.60.

PATENT SOLICITORS.

In no profession is there more need of skill and probity, special training and experience, than in that of the patent solicitor. Besides being thoroughly trustworthy, he should be at once a lawyer, a physicist, a chemist, an engineer, an electrician, and many other things too numerous to mention. Indeed his profession is one that calls for the exercise of a greater range of knowledge than it falls to the lot of one man to possess, so that the patent solicitor who does justice to his client should, in addition to his attributes, be possessed of sound judgment, and be able to utilize to the best advantage the knowledge of others who may be better versed than himself in particular branches of the arts with which he may from time to time have to deal. Failure to grasp the essence of an invention, or to cover it effectually in a specification, may lead to incalculable loss on the inventor's part; so may carelessness or infidelity. These are very important considerations, when it is borne in mind that the value of the interests yearly entrusted by inventors and others to patent solicitors represents an enormous sum.

Many persons fail to realize the numerous dangers that a patentee whose invention is commercially successful may be expected to encounter. They blindly imagine that if their application, which they often fill out themselves, is filed, and the fees paid that their patent is all right. Of the many thousands of applicants for patents how many are there who know the legal meaning of the term inventor; or who have anything like an adequate notion of what is or what is not proper subject matter for the grant of letters patent, and how is it to be expected that such questions can be solved by those who have had little or no practice, when one remembers the extreme difficulty experienced at times by the most learned judges in determining them? Viewing the many difficulties that necessarily beset the inventor, there can be no doubt that any attempt to render the services of patent solicitors superfluous will ever succeed in practice. The official rules of practice of the U. S. Patent Office say that as the value of patents depends largely upon the careful preparation of the specifications and claims, the assistance of competent counsel will, in most cases, be of advantage to the applicant; but the value of their services will be proportionate to their skill and honesty, and too much care cannot be exercised in their selection.

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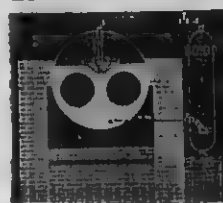
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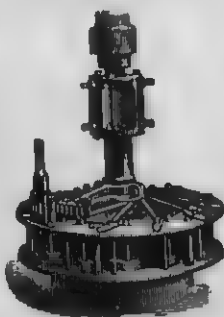
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JONATHAN MILL'S UNIVERSAL FLOUR DRESSER.

Over five hundred of the Mills' Universal Flour Dressers have already been placed in American flouring mills in the comparatively short space of time since they were placed on the market, and they have given universal satisfaction. This must be highly gratifying to the manufacturers, THE CUMMER ENGINE CO., of Cleveland, O., and to the inventor, Mr. Jonathan Mills, now a resident of Cleveland, O., a gentleman, so well known to the milling and mechanical world that his name alone is a guarantee of excellence.

The inventor says: "The true principle in bolting is incorporated in this machine, in the rapid, continuous delivery of the chop to the cloth by the solid corrugated inside cylinder, or drum. This cylinder travels with and in the same direction as the cloth, and at the same speed; therefore it is not a centrifugal reel; it travels at a speed just fast enough to insure a continuous, even, and gentle sliding action of the chop, which does not slide down the up-travelling side of the

and the fluted cylinder revolve in the same direction, and at the same speed, this rapid and continuous delivery of the stock to the cloth by the action of the inside fluted cylinder is the cause of the great capacity and pronounced and defined separations.

By putting these machines in place of your centrifugal reels you will be enabled to do much clearer and better bolting, and in many instances it will enable you to take a great portion of the flour from the head end of the reel and send it in to a higher grade than can be otherwise done. In many places where our Universal Flour Dresser has taken the place of centrifugal reels, it is doing twenty-five, fifty to seventy-cents per hour better work than they were able to do with the centrifugal reels. A milling year is computed to be three hundred working days of twenty-four hours each, and it can be readily figured that a saving of only five cents per hour for a milling year would amount to \$360, and a saving of twenty-five cents per hour would amount to 1,800 in the same period. It often

through the cloth to knock down their flour twenty-five cents an hour—little dreaming that the main cause of not making any profits out of their mills centered right in some forced action of their bolts. Bear in mind that twenty-five cents an hour means a profit or loss of \$1,800 per milling year. Our experience, as well as that of those who have thoroughly tested these reels, goes to prove that there is no further need for six-sided reels, or bolts with forced action, in any mill.

In the accompanying illustrations of the Mills' Universal Flour Dresser, Fig. 1 shows a perspective view of the reel looking from the head end. The arrow shown on the reel head denotes the direction the reel is to revolve. These cylinders are built up on to a cast-iron head and tail disks that are keyed fast on to the shaft. These heads are set back far enough to admit of feeding the stock in at the head end and discharging at the tail. Fig. 2 gives the reader an idea of the shape of the inside cylinder and shows the brush; it shows a section through the machine, looking at it from the head end. The reels all run over towards the left, when looking at them from the head end. Fig. 3 shows the cylinder with cloth on. The reels are built with round wooden heads and tails, 1½ inches thick and the cloth is easier tacked on or taken off than on an ordinary 6-sided reel. The cloth, when properly put on, forms a straight cylinder. The cloth is made so as not to meet around the reel by half an inch. It is then laced over and under easily, and the seam covered with a piece of old bolting cloth pasted over. The cloth is supported by flat steel hoops, 12 inches apart, which are flannel covered to prevent chafing. Each hoop is supported by six short wooden studs, fastened to the apex of the flutes of the inside cylinder, and the cloth, hoops and cylinder being positively connected, all travel together as one.

The apex of the flutes is about two and a half inches from the cloth, which is a sure preventative from overloading or sagging the cloth in the least. The fluted cylindrical form of this reel, and solid manner in which it is built, make it strong and stiff, and insures the durability of the cloth, which so far shows no sign of wear on any of the

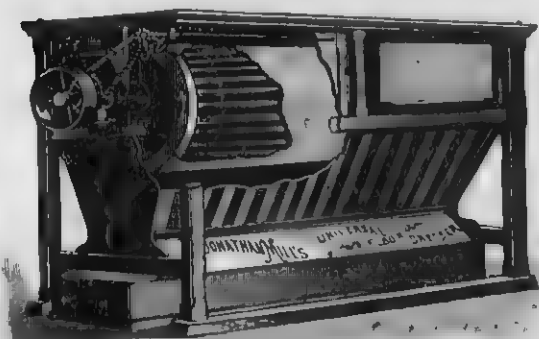


FIG. 1.

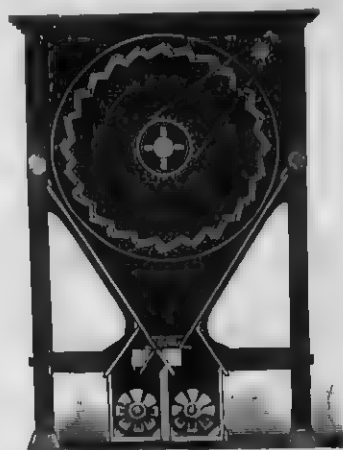


FIG. 2.

cloth quite as fast as the travel of the cloth. For this reason the cloth is rapidly delivering the chop on the corrugated-inside cylinder, and the corrugated cylinder is as rapidly delivering the chop back on the cloth at a higher point than where it left it. The rapid and gentle action in which this constantly agitated chop is delivered to the cloth insures that every particle of flour in the chop is delivered on the cloth without any force or violent action that would cause dirty or muddy looking flour. The separations are pronounced and perfect. We do not believe there is a spot or place in any mill where 6-sided reels or the forced bolting of centrifugals can be as profitably used as Mills' Universal Flour Dresser. It has been repeatedly proven by the actual working, that they will do more and better bolting than can be done by any other device now in use and it will be greatly to the interest of every new mill to adopt them for the great saving of room and power, and more so for their increased capacity and superior separations."

It requires less than half of one horse power to drive either size of the Mills' Dresser.

In writing further concerning this machine, the manufacturer says:

The revolutions of the reel and cylinder are such as to cause the chop to be cast off the fluted cylinder against the cloth with a gentle action, sufficient to make the most perfect and rapid separations ever accomplished by any bolting device, and although the cloth

happens that the flour from the centrifugal reels is not quite good enough to send into a higher grade than the lowest grade in the mill, when by handling it on our Flour Dresser it would go into a grade higher that would bring seventy-five cents to a dollar per barrel more money. In that case the money value

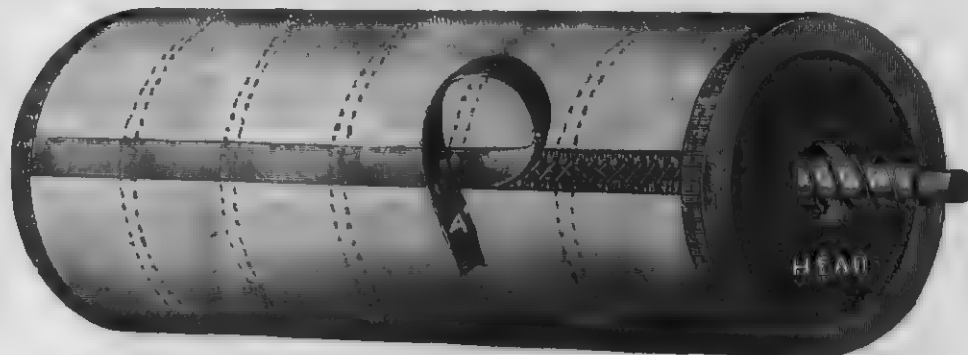


FIG. 3.

of our reel over the centrifugals would be based on the number of barrels made per hour.

In many mills where they can show no profits at the end of the year, they are running poor bolting reels, and losing a little on one and the other reels about the mill—five cents an hour here, and five cents there, and twenty-five cents an hour on some forced bolting reel that is slam-banging enough impurities

reels we have placed. The reels can be driven from either end.

BOLTING SYSTEM.

Figs. 4 and 5 show how conveniently this Dresser may be put into mills by setting the bolts on top of each other. The cut shows a side-driving pulley on the middle reel; the cross-shaft is shown in the tail end view (Fig.

5). The power to drive the middle reel is applied by bevel gears. The power is transmitted through the middle Reel to the Reel below, and the one above by sprocket chains at the head end of the reels. The flour can be taken off through the spouts, as shown at the middle and upper reel. The spouts show leading off to the left, but can just as readily be attached to the other conveyor and lead off to the right or spout straight down.

One of the conveyors is to return the cut-offs of the reel to the next reel below; either

and best manner of brushing the cloth that has ever been devised, as the bristles are long, soft and pliable, and the brush is applied to the cloth on the up-traveling quarter of the cloth, and its operation tends to drive back any material that has fastened into the mesh of the cloth.

Fig. 5 shows the tail end view of three of our reels, showing how the middle reel is driven, how the conveyors are driven, and how the tailings can be spouted away from each reel. The tailings spouts can be led

CO., CLEVELAND, O., and in their letter mention that they have seen this article in the UNITED STATES MILLER.

ELECTRO-PNEUMATIC TRANSIT.—A prominent electrician of Philadelphia has received letters patent for an invention which he says will revolutionize the mail, telegraphic and telephonic systems now in use. His plan is termed an electro-pneumatic transit, and is designed to carry letters and packages from city to city at a rate of nine miles a minute.

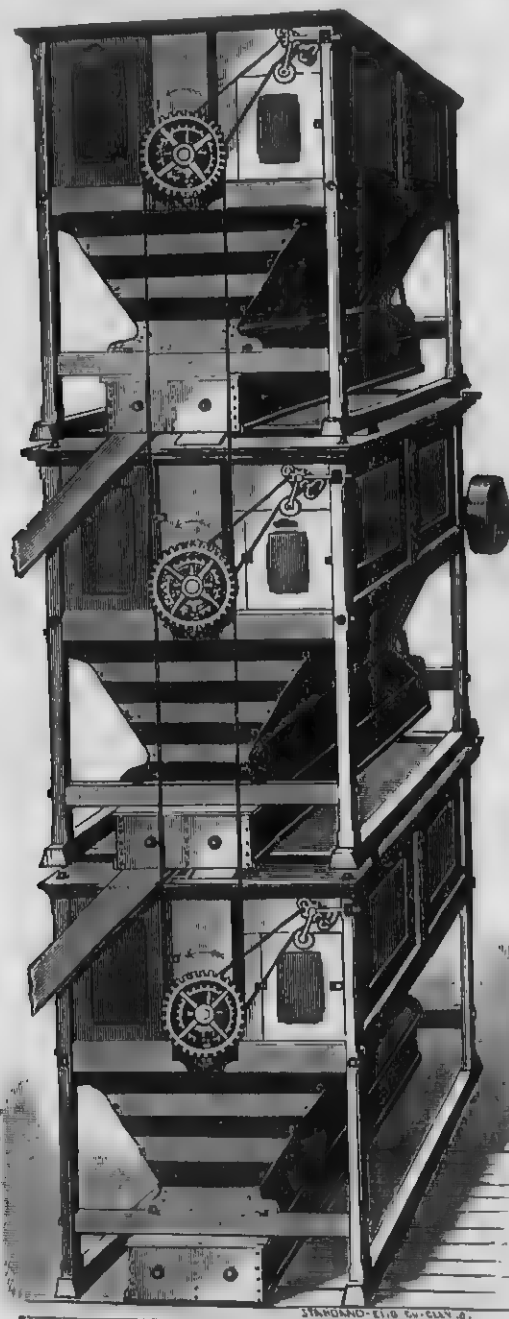


FIG. 4—TOP END.

conveyor can be used for that purpose at the option of the millwrights in setting up the Reels. Either reel can be fed in to just above the sprocket wheel by putting a pocket on to join the spout to. Every millwright and miller knows how to put on a spout pocket. The upper reel can be fed in at the top or by putting on a pocket just above the sprocket wheel. We show how the cloth-cleaning brush is driven. The brush is easily and quickly thrown on or off the cloth, or made to brush hard or easy at the option of the miller. This is the best constructed brush

or in any direction best suited to accommodate the location. The power is transmitted through the center reel to drive the one below and the one above. Reels can be driven by belt or sprocket chain direct on to either reel that may best suit the location of driving shaft in mill.

The reels are all built with the view of setting them one upon the other or separate, as may be required. Parties desiring full and complete information regarding the Mills' Universal Flour Dresser and System of Bolt-

ing should write to the CUMMER ENGINE

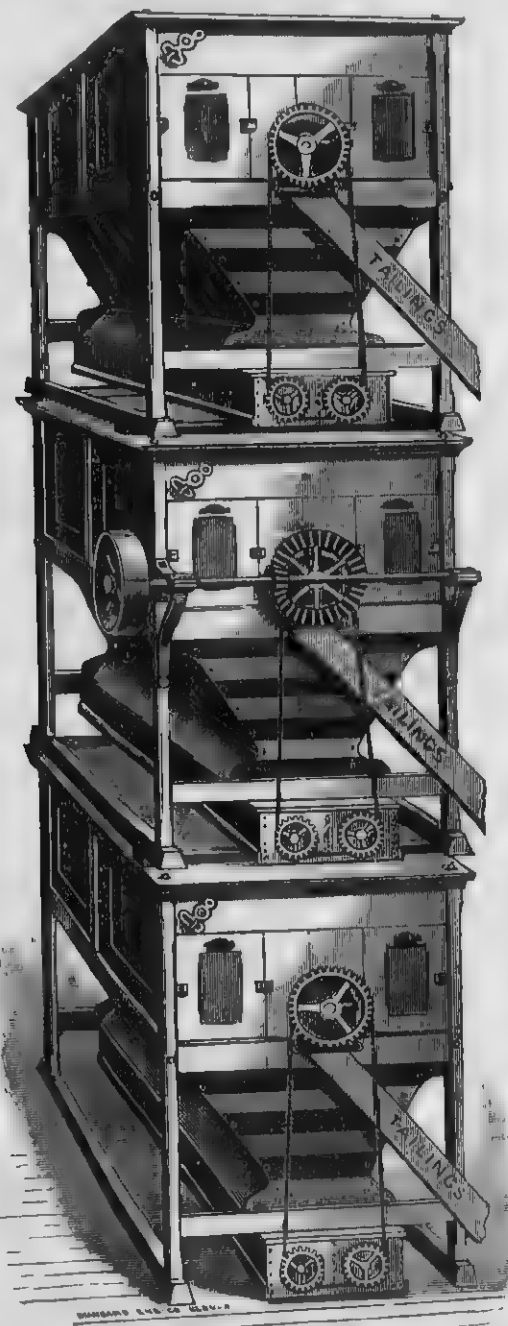


FIG. 5—TAIL END.

The tube will be of brass, incased in iron, through which a close-fitting metallic carriage containing the articles will be projected by a volume of compressed air. Intermediate cities and towns will have tubes connecting with the main tube, and the destination of the carriage will be under the control of the operator at the main office, who will manipulate the switches by electricity, and thus be enabled to send the carriage to any desired point. It is also intended to introduce it for local use, to take the place, in a measure, of the telephone.

DUNLOP BROTHERS' ANNUAL GRAIN AND FLOUR CIRCULAR.

In again presenting our annual report, accompanied by the various tabulated returns of imports, stocks, &c., applicable to the corn trade at this port for the year now closing, we would offer for your consideration a few comments on the results shown by these tables.

Turning first to prices, we observe that, although the year opened briskly, starting from a low level, it closes with but slight improvement. Wheat is only about 1s per 240 lbs. higher than it was this time twelve-months. Flour shows some irregularity as compared with last year's prices. Town-made, for example, is only 6d per 280 lbs. dearer, while Minnesotas are 1s to 1s6d higher, and American choice winter wheat brands, from scarcity, realize about 2s more. Hungarians, on the other hand, are a trifle cheaper; and English, French, and German all 1s to 2s lower. Indian corn, oats, and barley, are each 1s to 1s6d per boll (6 bushels) cheaper, while other articles of the trade are comparatively unchanged.

With respect to Imports.—Wheat shows an increase over last year equal to 25 per cent., or 120,000 qrs., and is within 54,000 qrs. of the large import of the year 1882. Flour reaches a total of no less than a million and three-quarter sacks per 280 lbs., exceeding the previous year by 260,000 sacks, and is by far the largest import ever recorded on our market. Indian corn is 92,000 qrs. over last year, while barley and peas are less by about 31,000 qrs. each. There is little difference to note in the figures relating to beans, oats, and oatmeal. As to the sources of this year's wheat supply, we find that while America and Canada still provide the greater proportion—viz.: 78 per cent.—yet this is about 14 per cent. less than they contributed in 1884; so that the balance drawn from other countries—Russia, India, Hungary, &c.—has risen to 22 per cent., as against 8 per cent. last year. Of flour, America and Canada have again furnished over 82 per cent.; Hungary, however, has given us this year about 60,000 sacks additional, raising her proportion to fully 11 per cent.—England, Germany, and France providing the balance.

The Exports exceed those of the previous year—in flour by 229,000 sacks, in Indian corn by 83,000 qrs.; and although wheat and barley fall somewhat under last year, yet this table indicates that from our market, as a distributing centre, an extending area is drawing supplies.

Stocks.—As was to be expected from the increased imports, the stock of wheat has been augmented some 65,000 qrs., and flour 121,000 sacks, barley 14,500 qrs., oats nearly 9,000 qrs., oatmeal 5,000 loads, peas 8,500 qrs., Indian corn 1,700 qrs., while beans show a diminution of nearly 10,000 qrs.

Looking at the average Weekly Consumption and Export of wheat and flour, we ascertain from the returns that, as regards both of these articles, there is an increase, wheat standing at 10,474 qrs., and flour at 31,682 sacks per 280 lbs., as against 9,725 qrs. and 31,255 sacks respectively for 1884. This increase in wheat is to be accounted for by the greater activity known to have prevailed among our home millers.

In reviewing the past year, we may predict that it will be remembered by the trade as a time of disappointment and perplexity. The improvement in prices with which the year opened was not long maintained, while a sharp advance in April, during the acute phase of the Afghan difficulty, was immediately followed by a corresponding decline. The effect, too, which might have been expected to result from the undoubted shortage of the American winter wheat crop, was completely neutralized by the huge proportions of the "visible supply" all through the year. We may venture to hope that the coming year will bring with it early indications of increasing activity, and a more encouraging future alike to shipper and importer.

GLASGOW, Scotland, December 31, 1885.

OUTLINE OF MODERN MILLING PROCESSES, &c.

BY W. W. JAGO, F. C. S.

Bakers generally are fairly familiar with the old-fashioned method of grinding wheat on stones, but in many cases have but little knowledge of the new methods of gradual reduction. Enquiries addressed to me, from time to time, lead me to believe that a brief description of modern milling will be of interest to many readers.

In stone mills of more recent date the meal, coming from the stones, was dressed through a long reel some 20 to 30 feet in length and clothed with silk. The part of the reel nearer to the stones is clothed with a finer silk than the other end; through this finer silk the flour passed, and constituted the stone-millers' household flour. Through the part of the reel clothed with the coarser silk another product passed, known as "sharps"; over the tail of the reel passed out the bran. Until comparatively recently these sharps were considered to contain no flour worth taking out, and were sold by the miller as food for pigs. A discovery which revolutionized milling was that these sharps contained a quantity of valuable flour and only required to be purified in order to yield flour of a very high quality. The millers' purifiers are simply machines for dressing these sharps, or as they are now frequently termed "middlings." These purifiers are of very simple construction; viewed from the outside they look like a large wooden box; they contain within a set of sieves placed slightly obliquely. These sieves are kept shaking by an eccentric or crank arrangement, and the sharps fed on to them at the head. By means of a fan a current of air is drawn up through the sieves; this removes all light fluffy matter from the sharps. The heavier portions pass through the sieves and constitute the purified middlings, while the waste sharps pass over the tail of the purifier. These purified middlings were really a coarse flour and were then simply ground on stones into flour of the proper state of fineness. This flour, after re-dressing, was found to be far whiter than that which was obtained from the silk reel, and was the patent flour of the stone miller. These purified middlings were often reduced to flour on rolls, and so such millers frequently assured their customers that their flour was roller made. In the old days of stone-milling, when the sharps were sold as pig food, the

man who could succeed in making the fewest of them was considered the best miller. But with the invention of the purifier, milling underwent a revolution, and now the miller's aim is to make as much sharps and as little flour as possible during his first grinding or reduction of the wheat. For this gradual reduction, rolls are found to answer far better than stones; the grain passes through a series of rolls, set at gradually diminishing distances, and so is step by step broken up into fragments (sharps), a small quantity of flour, and tailings which ultimately become pure bran. The middlings are purified and in their turn crushed into flour between other sets of rolls. Straight-grade flour is the whole of the flour that is produced mixed together. Patent flour is that of some of the purest and whitest middlings taken out separately; the remainder going to form a bakers' flour. It is evident that in proportion as a large quantity of patent flour is removed the bakers' flour must of necessity suffer. The patent flour contains more starch and less gluten than the bakers', hence it is weaker, but is also of better color; of course, there is a good deal of difference between the patents and the households of some millers compared with those of others. Some millers simply make two grades of flour only slightly different from each other; others make a patent of very high class; the bakers' flour must necessarily then be correspondingly low. Such is a very brief account of principles of modern milling which it is hoped may be of interest to some readers.

It will be noticed that the above description applies to different grades of flour obtained from one and the same wheat mixture. At times a low grade flour is obtained by working on a lower grade wheat. It is somewhat difficult to advise a would-be purchaser of cheap flour in other words than Punch's laconic advice to those about to marry, "DON'T!" But if low priced flour must be bought, I think it on the whole safer to take a household flour produced from a high class wheat mixture with a certain proportion of patent removed, rather than a straight run from cheap and inferior wheats. Working on high class wheats none of the flour produced is bad, but with cheap wheats, which often means dirty, unsound, and inferior wheats, none of the product can possibly reach a high standard of excellence; too often the flour is not only bad in color and strength but also is unsound.—British and Foreign Confectioner.

TO MEASURE BELTING IN THE ROLL.—A simple method, which is very closely correct, is as follows: The sum of the diameters of the roll and the eye in inches, multiplied by the number of turns made by the belt, and this product multiplied by the decimal .1309 will be the length of the belt in feet.

THREE LITTLE WICKS.—There are three little wicks to the lamp of man's life—brain, blood and breath. Press the brain a little, its light goes out, followed by both the others. Stop the heart a minute and out go all three of the wicks. Choke the air out of the lungs and presently the fluid ceases to supply the other centers of flame, and all is soon stagnation, cold and darkness.



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TEACHING THE HAND.

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For years this problem in the prevailing system of education has forced itself on Mr. S. M. Inman. He soon came to the conclusion that the fault was not in the studies pursued in our institutions of learning, considered in themselves, but in the failure to combine practical with literary education. Add the study in a practical way, of the mechanic arts to the curriculum, and we should have on graduation day, not only a class of finished scholars stepping into the arena of life, but a class of young men who have already developed the talent for some of the various branches of wood-work, of iron-work, or of the other pursuits out of which a living can be made.

These observations, by the *Atlanta Constitution*, were made at the instance of an inspector of the Atlanta, Ga., University, by a committee appointed to investigate the matter in relation to introducing manual training in the public schools of that city.

C. C. Tucker, who has charge of the institute, stated that the attendance upon the industrial class does not interfere with the other college studies, but merely takes its place as one of them. The scholars are divided into three classes, one of which has twenty-four members, the second fifteen, and the third thirty-two, being graded according to proficiency just like the literary classes. The class exercise lasts one hour and a half, being four hours and a half in all. This arrangement serves the double purpose of filling in the day's exercises in the industrial room, and yet of keeping each scholar only one and a half hours from his other studies.

"Does this work attract attention from the literary studies?" asked Commissioner Smith.

"It rather serves as an incentive," replied Prof. Chase. "It is a relaxation from mental studies, and sends the scholars back to their classes brightened up and ready to do such vigorous thinking that the time after all is not lost, but serves as a recess."

By this time the party had entered the building, where Mr. Tucker stood ready to receive it.

"We only teach the elementary principles of wood-work," said Mr. Tucker, under the rigid cross-examination of Commissioner Smith. "You see there are certain elementary principles which underlie all wood-work which, when mastered, enables the scholar to choose for himself the trade he wishes to learn. Here he follows the bent of his mind, and can make no mistake in after life as to his occupation. In iron-work, also, there are elementary principles, which underlie every line growing out of the use of metal. The tools, also, are the same, in fact, the variations being merely for special adaptation to special lines of work. This is true of all other lines of industry. Thus you will see that the pupil, serving his regular class time here by the time his three years' course is finished, has not only completed his literary education, but has developed at the same

time his special aptitude for some line of trade, and is thus saved the apprenticeship he would otherwise have to serve. At present we are only engaged in wood-work, in which we have been so successful that the iron department will be added shortly.

"Do industrial schools gain anything from being located near manufactories?" asked Commissioner Smith.

"It adds to their value tenfold," answered Mr. Tucker. "Here we teach the science of the work, with enough of the practical manipulation to make the scholars familiar with the use and care of tools. With large factories near around, the class could be taken out twice or thrice a month, and by inspection of the actual work, greatly supplement what they have learned here. The factories around Atlanta would be of such value to scholars that it could not be computed by a money value. It is a good thing to be near the shops."

"Let me give you another point," said Professor Chase, as the party walked back to the main building. "Last summer, during vacation, many of the university scholars, instead of teaching school or looking to the learned professions, went to work at the different trades, for which they had developed a talent in our industrial school, and came back with more money than the school teachers. You see it turns their minds to work."

"This is a great success," said Mr. Roffe, as he wiped his hands with his apron. "We familiarize all these boys with the use of tools, the manipulation of wood and iron, and the general principles which underlie the mechanic arts."

"We have now thirty boys, and have applications which we cannot accept. Most of these boys are shopboys, who come up here to learn the principles of the trades which they are learning. It is our plan to familiarize our students with wood and iron, so that they will readily find out the trade for which they have a talent. Another point about the school is that the bright side of the trade is presented."

"When a boy enters a machine shop, he is at first put to cleaning off grease, and such other work as disgusts him with the whole business. Here we put him at the lathe or bench at once. He goes to work with enthusiasm, has a pride in his surroundings, and will develop into a good and self-respecting workman. Thus we help to form his character as well as to instruct him."

A more willing and intelligent-looking set of workers was never seen. Such scenes, repeated in every town of Georgia, would add brawn to the arm, wealth to the purse and cultivation to the brain.—*American Machinist*, N. Y., Feb. 15.

S. S. STOUT.

H. G. UNDERWOOD.

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(Formerly Examiners U. S. Patent Office.)

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E. T. BARNUM, Manufacturer of Wire and Iron Work, at Detroit, Mich., writes to the trade, as follows: "About twenty years ago, in 1866, the undersigned started, in a small way, the manufacture of wire and iron work, giving employment to less than ten men. At that time the wire business was in its infancy, and the practical uses of wire work were very imperfectly developed. In 1879, the business had increased so that buildings four stories high and one hundred feet square were secured, giving employment to over four hundred men. In 1882, a joint stock company was organized (of which I was president and general manager), and, in order to meet the wants of the trade, buildings were erected and occupied in 1883, giving employment to over seven hundred men. The panic in the Spring of 1884 found the company with a large stock of manufactured goods ready for the Spring trade, and being somewhat extended for the times, together with internal dissensions among a few of the stockholders, finally resulted in the E. T. Barnum Wire and Iron Works going into the hands of a receiver, showing assets of \$115,000 over liabilities. Recently, December 3d, 1885, a fire occurred, burning the works, which were the most extensive and complete in all its appointments, in the world. This fire has destroyed the work of years, and at a time when re-organization was being perfected. I would respectfully announce that notwithstanding these misfortunes, I have made arrangements to promptly fill orders for wire and iron work that may be sent me, and that I propose, as soon as possible to get the business in running order again. Letters intended for me, but addressed E. T. Barnum Wire and Iron Works, frequently get into other hands. For the present please leave off the Wire and Iron Works, and address your letters. E. T. BARNUM, Detroit, Mich.

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PLEASANT PARAGRAPHS.

A YANKEE clinched his argument with an Englishman as to the relative size of the Thames and Mississippi by saying: "Why, look here, mister, there ain't enough water in the whole of the Thames to make a gargle for the mouth of the Mississippi River."

A MAN that has plenty of corn in his barn is always of an even disposition, but the one who has it on his feet is invariably cross-grained.

TOMMY'S REASONS.—Fond papa (proudly displaying the accomplishments of his six-year-old boy to the visiting clergyman): "Now, Tommy, tell the gentleman what you would like to be, when you grow up to be a great, big man."

Tommy (pointing at the distinguished visitor): "I'd like to be a minister like him."

Visiting clergyman (greatly gratified): "Ah, my young friend, you would like to be a clergyman like me, would you? And, now, tell me why you would like to be clergyman like me."

Tommy (promptly): "'Cause I heard pa say yesterday that you had the softest job of any man he knew. Nothing to do but talk an hour or so, every Sunday, live free on the members of the congregation, and be worshipped like a little tin god on wheels by all the women in the parish."

QUITE A NOVELTY—IN HIS WAY.—The wife of a New York cashier remarked at the supper table:—

"Have you read the late novel by Wilkie Collins?"

"Haven't read it."

"Well, there is a cashier of a bank in it just like you. He is honest and faithful, and does not run off with his employer's money."

"That's the way it is with those novelists. They are so unnatural and improbable in their descriptions of men."

MRS. MULLIGAN—And so you have no mother now?

Motherless Boy—No, mum.

Mrs. Mulligan—Well, me boy, whenever you feel the want of a good licking come to me and I'll be a mother to you.

THREE MYSTERIOUS BASS.—"Another funny thing happened to me the other day, this time up a Lackawaxen," said John Gilbert, the traveling groceryman. "I was waiting there for a train, and, as by no way that I could figure it, could it get there under three hours, I walked over to gaze on the Delaware. I strolled up and down the river bank a while, and then noticed a canal that crossed the river by a big viaduct. I walked up the canal bank and watched the boats go by. They were loaded with coal. Thirsting for information, I finally said to a boy who came along on a mule, wearing his father's trousers rolled up to his knees:

"Where is this coal going to, my little man?"

"To market, pop?" he replied.

"Then I watched more boats, and, not being able to still my longing for knowledge, by and by I said to a man who was working the tiller of one of the boats:

"How many tons do you carry?"

"As many, begorra, as any other boat that roons this detch!"

"Surfeltd with information, I returned to the river. I walked up and down, and pres-

ently I saw a pine peg, which was driven in the sand near the water. There was a string to it.

"Now I wonder what that is?" I said to myself.

"Not being able to answer the question, I went and pulled the peg out of the sand. The string came out of the water pretty hard, and I found that three big black bass had got fast on it in some way through the gills. There was no mistake about it. There was the peg, there was the string, and there were the bass, alive and kicking.

"Well," I says, 'that's certainly the funniest thing I ever did see.'

"I had heard of eels traveling overland from one pond to another; perch that climb trees were old acquaintances of mine; cat-fish that swear at you like troopers when they take the hook, I had seen and heard; but bass that could come out of the water, string themselves like these, shove the peg in the sand, and get back in the water again, was more than I could explain.

"When I go back home and tell this," I said to myself, 'people won't believe me, and then I'll feel bad.'

"So I looked around to see if there was any one near that could enlighten me on this curious subject. I saw no one but a pious-looking old gentleman, who was fishing along the river quite a way below. As he was so intent on his sport that he seemed oblivious to all around him, I didn't like to disturb him in his gentle recreation, and so walked back to the hotel and told the landlord that he might cook the bass for my supper. He did, and they were good. After supper I went down to get the train. There was a pious-looking, white-haired old gentleman there, with a fish pole on his shoulder. He seemed to be very mad. As I got on the train, I heard him say:

"Yes, sir; by the jumping jimminy! Three old sockers; and I'll give six dollars to know what became of 'em!"

"That man ain't as pious as he looks," I said, as the train moved out.

"And then the thing struck me all of a sudden, and I said I'd bet anything that the white-haired old man had found some bass that had strung themselves just as mine had, and that he'd gone and lost 'em some way or other.

"I say, don't it beat everything how these funny things will keep happening to me?"—*New York Sun.*

"JULIA, I don't see why you are going to marry Harry Bascomb. He hasn't any money, and it is not likely that he'll ever have any."

"Fanny, I'd scorn to marry for money. Harry is handsome and a fine athlete. He would bring to me a sense of protection."

"Oh, that's all right, Julia. Every one to her mind. You may marry for protection; I intend to marry for revenue."

SNOOPS was a young man who had been married a year, and he was telling a friend how diffident he was when single. "Were you much embarrassed when you popped the question?" asked the friend.

"Embarrassed! Well, I should say I was. I owed \$1,500 for board and clothes and one thing or other, and didn't have a cent to pay it with.

"UNCLE James," said a young lady who was spending a few days in the country, "is

that chicken by the gate a Brahmin?"

"No," replied uncle James, "he's a Leg-horn."

"Why, certainly, to be sure" said the young lady. "How stupid of me! I can see the horns on his legs."

"Is the old man any better?" asked a boot-black of a newsboy yesterday.

"Better!" echoed Jim, "I should say he was; you ought to have seen him sling stove wood at mother this morning."

HE KNEW.—"What do we call those animals that live partly on land and partly in the water?" asked a New York teacher of the new boy.

"Bathers," replied the little boy, who had been to Coney Island on several occasions.

"You are getting to be bright. Perhaps you can give me the name of some of the migratory birds."

"Bank cashiers."—*Texas Siftings.*

"Yes," thundered the preacher from the pulpit, "the hairs of our head are all numbered."

"I wonder where the back numbers go?" said the bald-headed man in the front pew, rubbing his shining scalp.

"Do as I do; get a reprint," said the man behind him, and he took off his wig and fanned the flies away with it.—*San Francisco (Cal.) Chronicle.*

A FATHER'S MISTAKE.—Young Mr. Featherly, a guest, declined cake, and Bobby's eyes grew big with astonishment. "Don't you want any cake?" he asked.

"No Bobby," replied Featherly, "I seldom eat it."

"How's that, pa?" inquired Bobby, turning to the old gentleman; "you said at the dinner table Mr. Featherly always takes the cake."—*New York Sun.*

A LITTLE boy was trudging along the street with a slate under his arm, when an old lady stopped him and said kindly: "That is right, my little boy. I love to see little boys who are anxious to learn and are fond of going to school. Here's a nickel for you."

"Thank ye, mum," said the little boy.

"Been buying a new slate, I see."

"Yes, mum; it's for me fader."

"For your father?"

"Yes, mum; he keeps a saloon on Second avener."—*New York Sun.*

COUNTRY MERCHANT (to Chicago drummer)—"A St. Louis firm offers me eighteen months' time."

Chicago drummer—"Only eighteen months! They're trying to swindle you."

Merchant—"What time can your house give?"

Chicago drummer—"Four years are our usual terms; but I'll tell you what I'll do. You give me an order, and if the account is not paid in 30 days I'll take 10 per cent. off; if not paid in 60 days, 20 per cent. off; and if not paid in ninety days, 30 per cent. off."

Merchant—"And if not paid in 4 months."

Chicago drummer—"Then I'll wipe the account off the books altogether, and send you a framed photograph of our monster establishment. No St. Louis firm can do business in this territory while the representative of Alexander Rockbottom & Co. is abroad."—*New York Sun.*

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NINE ROOMS AND TWENTY-FOUR SOLDIERS.

An exchange tells this story of a French sergeant to whom was intrusted the oversight of twenty-four soldiers, and who, doubtless, had a chance to find out for himself the truth of Longfellow's statement that "things are not what they seem."

In the building which the soldiers were to occupy there were nine rooms, so he arranged his men in the following manner, taking care

to keep the center room to himself, so that he could thus manage a sort of war-like "puss in the corner."

By this disposition of the men the brave sergeant had nine stationed on each face of the building, and so flattered himself that

it was well guarded. By and by the soldiers grew tired, and not seeing any signs of danger, they knocked at the door of the center room and asked permission to alter the arrangement, so that they might have a little amusement.

The Sergeant gave consent on condition that there should always be nine men on each side of the house,

and then retired to rest. About an hour afterward he went his rounds and found his men arranged thus:

He counted carefully. There were nine on each side, so he went peacefully to bed again, quite satisfied with the conduct of his men, and not imagining that four soldiers had gone for a walk in the town, as you may see if you count the number in the plan adjoining.

Not long afterward the truants returned, bringing with them four friends. There were now twenty-eight men in the building.

For the second time the Sergeant went his rounds and found the rooms occupied as follows:

"Nine on each side," he thought, "certainly I am a lucky fellow to have such a trustworthy set of men under me." And yet there

were four more soldiers than there were at first, and eight more than when he last went round. Truly, things are not what they seem.

Soon after the Sergeant had retired four more fresh soldiers came in, so the number of the detachment was increased to thirty-two. Once more the vigilant Sergeant went round. Once more he found nine on each side, and went back to his room without suspecting mischief.

Who should he be doubtful, when there were always nine on each side?

By and by four more men came in, and the number in the building was raised to thirty-six. The men were at first afraid that they would be found out, but after a little while they managed to arrange themselves, so that the magic number should still be found on each side; neither more nor less.

And so for the fourth time the Sergeant counted and was satisfied.

Made bold by their success in puzzling their leader, the men agreed that half should leave the building, only eighteen remaining behind. While they were gone the Sergeant came round for the last time, and found the

arrangement as follows:

What more can a man wish? There were nine on each side; and yet there were six men less than at first, and eighteen less than when he last went round.

It is easy to explain how the Sergeant was deceived. The corner rooms are counted on two sides of the house at once. The more there are in these rooms, the fewer there are in the whole building; and the fewer there are in the corner rooms, the more there are in the house.

THE longest spans of overhead telegraph wire in the world have been recently put up by the French in Cochin China. They cross the river Mekong, posts 160 feet high having been placed on each side of the river at a spot where the width is 2,500, and from these silicious bronze wires—one .04 inch and the other .055 inch in diameter—are extended across the stream.

THE Panama Railway Company has been laying many miles of extra track of late for switches and branch lines, and contemplates the construction of an additional line across the isthmus. Three passenger trains are now running daily, and an increased number of freight trains. A large amount of new rolling stock has lately been added. One cause of the increase in traffic is the transportation of men and materials for the Panama Canal Company.

DANIELS' "Lehrbuch der Geographie" for the present year, gives the population of the world at 1,485,000,000, speaking 8,064 languages and dialects. There are, it says, 1,100 forms of religious belief. Christendom includes 432,000,000, divided between 208,000,000 Roman Catholics, 123,000,000 Protestants, 83,000,000 Greeks or Orthodox, and 8,000,000 in one hundred various sects. The Jews number 8,000,000, the Mohammedans 120,000,000, and the followers of Brahma 138,000,000. The Pagans proper are estimated at 234,000,000, and the Buddhists at 503,000,000.

A LAUGHABLE MISTAKE.—You remember Louise Eldridge's adventure with a mustard-poultice, don't you? It's a good many years ago, when Louise was young and charming. Capt. Eldridge and she were stopping at a country hotel, when in the middle of the night the Captain was taken with cramps, and Louise slipped on her dressing-gown and went down to the porter, who took her to the kitchen, where she manufactured a rousing mustard-poultice. She ran rapidly up stairs so that the blamed thing should not cool. She flew along the passage till she saw a dim light over the transom. She fitted into the room, she rushed up to the bed, she pulled down the spreads, she yanked up a night-gown, and she clapped a red-hot mustard-plaster on the pit of a stomach, saying: "That will relieve you, my dear!" And a great big strange man sat up and cursed like a pilot off Sandy Hook. Poor Louise! she had cramps herself before she gained her own room and fainted on the hearth-rug, while the man with the mustard-poultice went raging around to find his unknown assailant.—N. Y. Mirror.

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WHEAT PRODUCT OF HUNGARY.

CONSUL STERNE.

In the following report on the wheat crop of Hungary of the past year, 1885, the district of Croatia-Slavonia is not included. That district produces but little grain, being heavily timbered for the most part, and so will not materially alter the figures presented.

One hundred and fourteen millions of bushels of wheat were raised on 7,940,000 acres, the average per acre being about 14.4 bushels. In 1884 the quantity raised was 105,000,000 bushels, with an average yield of 13.2 bushels to the acre, and in 1883, 90,000,000 bushels, with an average of twelve bushels to the acre. This shows an excess for the present year of 11,000,000 bushels above the average of the three years, and was therefore satisfactory as to quantity, though it does not equal the result for 1882, which was, however, one of the best years known in Hungary.

In quality the result for 1885 is even more satisfactory. The wheat is very superior in weight and color, and much of it possesses the character of being what is termed "Stahl-Weizen" (steel wheat), because of its hardness, a quality for which Hungarian wheat is celebrated in good years. In respect to general quality the present crop is specially superior to that of the preceding year, which was so deficient in this point as hardly to deserve the name of "Hungarian wheat," and brought the lowest price known for years, much of it yet being reported to be in the hands of the producers.

Notwithstanding these comparatively good results of 1885, the producers are anything but happy, for in spite of its superior quality the wheat of 1885 sells at but little more than the very inferior article of 1884, and there is thus far very little demand for it. While it is true that the suddenly sprung "Bulgarian difficulty" has caused a slight advance and more life in the wheat market, the normal prices for the present can be quoted at 80 cents a bushel for fall, and 88 cents for spring delivery. To alleviate to some extent the present unfavorable condition, the railways of the state have made some reductions in the rates of freight, but while such a remedy might cause some relief where there is only a question of competition with the other large grain-producing countries, the same will not cure the difficulty of to-day. While formerly there was only the bugbear of competition, by America first of all, it has now come in the shape of the wall of protection which the former customers of Hungary are erecting, the lately established additional duty on grain by Germany being the last brick in this wall.

The gradually growing unfavorable position of Hungary as a purely agricultural state is no doubt the cause of its present great effort to develop manufacturing and other industries. Thus it is hoped to overcome the danger by creating a larger home consumption which a manufacturing population is supposed to supply. More attention is to be paid to the raising of cattle and the products of the dairy; and instead of placing the simple grain upon the market, as much of it as possible is to be converted into other forms, such as high wines, starch, &c., thus creating more profitable articles of export, and at the same time obviating the necessity

of importing such articles. Even Hungary has an attack of the "protective fever." Sure it is that farming for grain only is not profitable at present prices, and much of it is carried on at a positive loss for many of the large estates are in the hands of masters who have made their contracts on a basis of the formerly ruling high prices and on leases running from seven to fourteen years.

I have said this much upon the subject of wheat, because it is the most important product of Hungary, and also because the prices of wheat in Europe, and indirectly in America, are to some extent governed by the exhibit of Hungary.

A SOFT WHEAT CRAZE.

In every community there is some genius whose mission is to show that the part is greater than the whole, that the lesser involves the greater, and so forth, and he is busy at present in Manitoba endeavoring to persuade the farmers of that Province to extend the cultivation of White Russian or other soft spring wheat at the expense of the Red Fife. The idea is that White Russian will sell for nearly as much as the Red Fife and that it grows fifteen bushels to the acre more than the other. The truth, however, as opposed to the idea is that it won't and doesn't. It may be a few days earlier; but, unless unduly delayed, the Red Fife ripens early enough to escape any frost that would spare White Russian, and in the very unusual event of damage by early frost the Fife wheat frozen is worth as much as the other untouched. The latter, if frozen, is unmarketable. It is also more liable to blight and smut. It will not clean like the other, and is in every way inferior. If farmers wish to damage the interests of the Province, send immigration elsewhere, and generally destroy the enviable reputation they have acquired, they will discard the hard and adopt the soft wheat; if they don't they won't. The experiment has been tried in Minnesota, and it failed. Those who tried it wish they had not and are getting back to former lines as quickly as they can.—*Montreal Herald.*

AN INFANT LOCOMOTIVE.

John C. Gould, machinist and musician, of No. 69 Whiting street, New Haven, Ct., has constructed a full-fledged locomotive, which is 20 inches long from the cab entrance to the catcher tip, or 33 inches long with the tender. Gold mounted steel bands circle the brass boiler, from which a steam pressure of 100 pounds can be developed. A miniature steam gauge within the cab registered as high as sixty pounds of steam. By other signs the constructor can easily tell when his pet is under a greater pressure. It took about one year to build the locomotive, and estimating the value of the small tools he had to make to model the intricate machinery and the value of the material of which the locomotive is made, the cost of the whole thing was about \$400.

An ordinary five-cent doll would look like a giant in the cab, and a clove would seem like a big piece of timber if placed alongside of the small steel across that which keeps together the various sections of machinery. The height of the cab is only five inches and a half from the floor, and it is 7 inches long on the top. It is 4 inches wide. A baby's thimble would loom up in imagination to the proportions of a kerosene barrel if it was put side by

side with the polished oil cups. These are 3-16ths of an inch wide each and about a quarter of an inch deep. A gallon of oil would not be exhausted by them in a century and a half. The engine has an inch and a quarter stroke, and is propelled by driving wheels that are three and a half inches in diameter and ten and a half inches in circumference.

Other dimensions in this little wonder furnished by the builder were: Connecting rods, 4 1/2 inches from center to center; boiler 11 inches long; heating room in fire-box, 4 inches; cylinder box 1 1/2 inches long; smoke stack, 3 1/2 inches high; side cab windows, 1 1/2 inch high and 1 inch wide; front cab windows, 1/2 of an inch wide; length of sand slide from sand box, 4 inches; coal room in tender, 2 1/2 inches wide and 7 inches long.

The smoke stack, sand box and dome are gold-mounted. To give a thorough description of this fine piece of mechanism would require a great deal of space in a newspaper to do the subject justice. Suffice it to say that no engine on the Consolidated road has more appointments than this, but of course they are all on a very reduced scale. Mr. Gould has been requested by his friends to place the product of his skill on exhibition on some Chapel street window, so that people can see what a remarkable piece of work he has turned out. He has thus far refused to do so. Probably the first place where it will be seen publicly is at the Exhibition of Mechanical Art in New York that will be held shortly. The engine can attain a speed of nine miles an hour.—*New Haven Union.*

Dust and smoke in factories may now be dealt with by electricity. It was recently asserted at the meeting of the British Association in Montreal, in a paper by Professor Lodge, that a dusty atmosphere would be speedily cleared by the passage of electric sparks. A prominent lead-smelter of Wales, reading a report of this meeting, determined to apply the scheme to purifying the atmosphere of his works, where the fumes or volatilized lead were continually escaping from the flues and poisoning the atmosphere. An experimental shaft was made of barrels with windows cut in them, and the electric spark was transmitted. The experiment is claimed to have been a complete success.—*Mechanics.*

AN extraordinary feat in telephoning was recently accomplished between St. Petersburg and Boulogne, a distance of 2,465 miles. Conversation was kept up notwithstanding a rather high induction. The Russian engineers hope to succeed in conversing by telephone over a distance of 4,665 miles.

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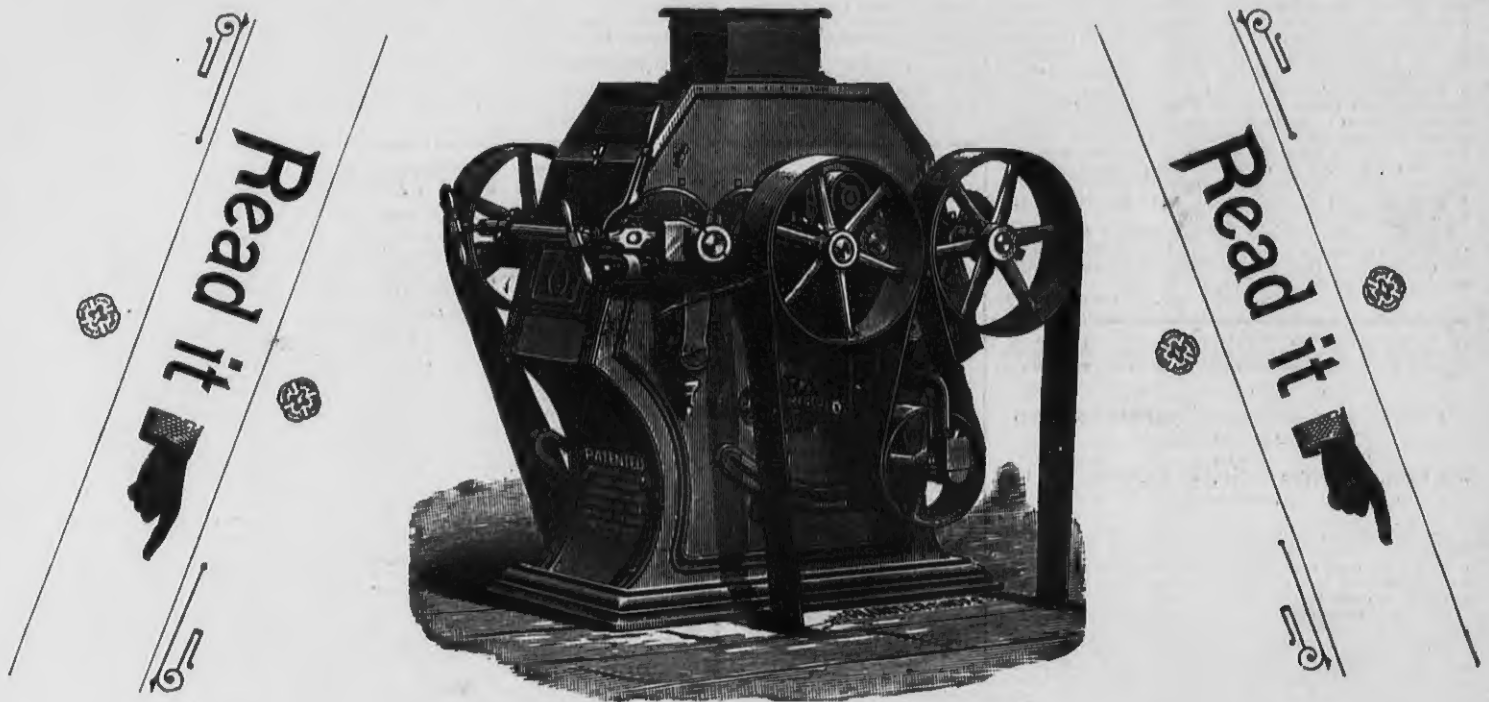
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